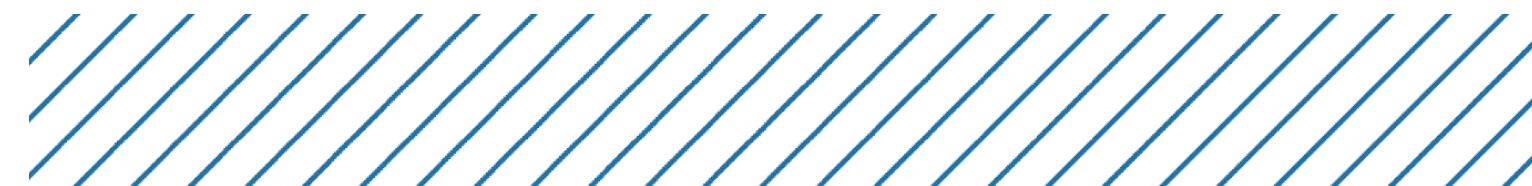# Super Boost Your Students' Early Literacy

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AGENDA

- What is literacy?

- Building Blocks of Reading

- Application Activities Using WORD Force

- Behavioral Analysis of WORD Force Students

What is literacy?

Interactive: What is language? What is literacy?

Type your responses in the chat.

What is language? What is literacy?

	Receptive (Comprehending)	Expressive (Expressing)
Spoken Language	Listening	Speaking
Written Language	Reading	Writing

Literacy = Written Language = Reading and Writing

Building Blocks of Reading

Building Blocks of Literacy

From **Learning to Read** to **Reading to Learn**

Writing (letter formation, conventions, cohesion)
Reading (phonics, vocabulary, fluency, comprehension)
Spelling (spell many different types of words)
Advanced Phonics (reading words like "delightful")
Emergent Writing (e.g., wiggly lines to represent letters)
Emergent Spelling (e.g., "c" or "ct" for "cat")
Early Phonics (e.g., learn alphabet, learn letter-sound associations)
Concepts of Print (e.g., identify title, read from left-to-right)
Phonological Awareness (syllable awareness, rhyme awareness, phonemic awareness)
Spoken Language (listening/understanding and speaking skills)

Conventional Literacy

Early Literacy

Cognitive skills (e.g., memory) and background knowledge influence acquisition of these skills.

ee	ea
green	eat
feet	clean
see	seat

"The [term] **science of reading** refers to the accumulated knowledge about reading, reading development, and best practices for reading instruction obtained by the use of the scientific method."

Source: Petscher et al., 2020

LANGUAGE COMPREHENSION

BACKGROUND KNOWLEDGE
(facts, concepts, etc.)

VOCABULARY
(breadth, precision, links, etc.)

LANGUAGE STRUCTURES
(syntax, semantics, etc.)

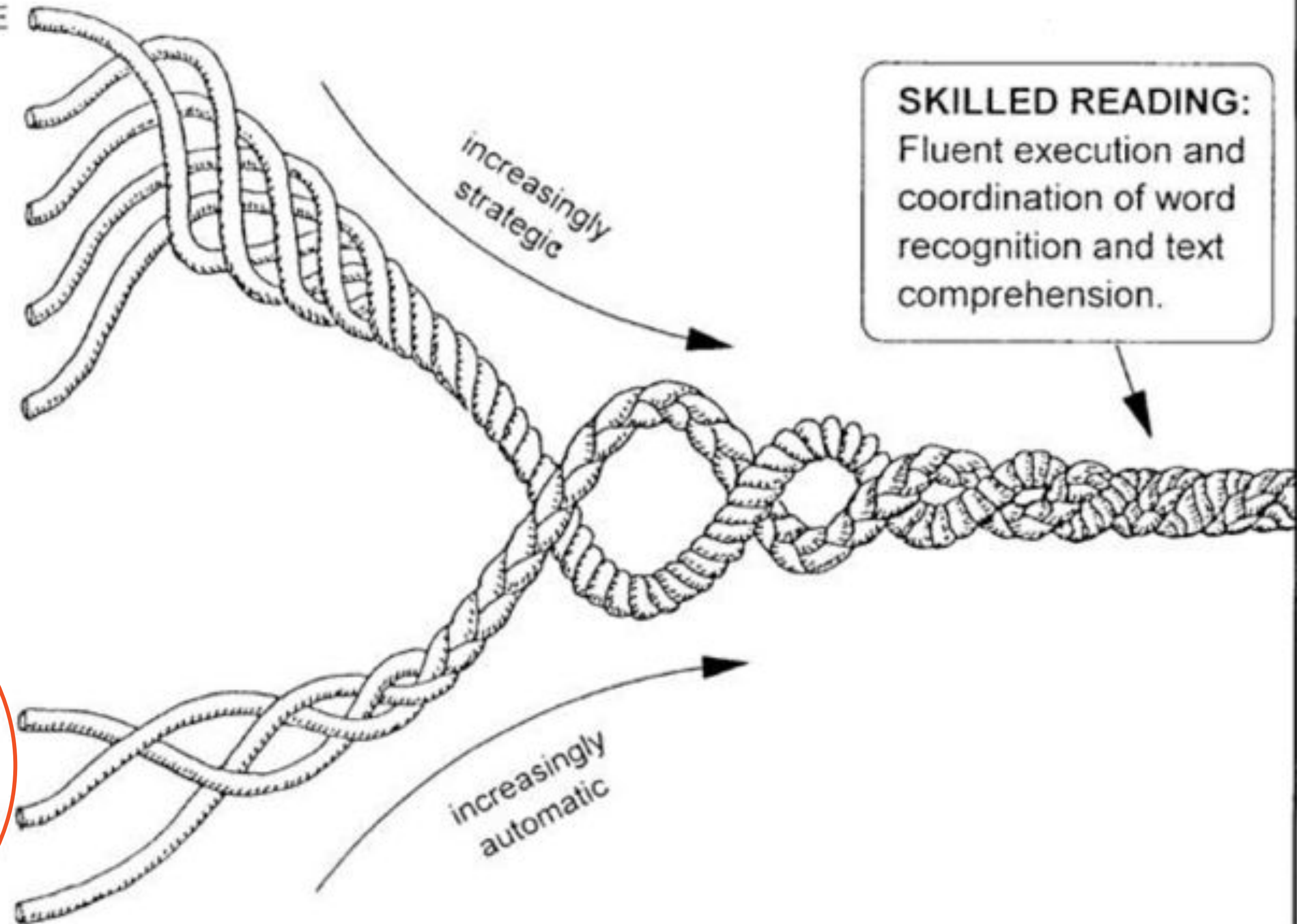VERBAL REASONING
(inference, metaphor, etc.)

LITERACY KNOWLEDGE
(print concepts, genres, etc.)

WORD RECOGNITION

PHONOLOGICAL AWARENESS
(syllables, phonemes, etc.)

DECODING (alphabetic principle,
spelling-sound correspondences)

SIGHT RECOGNITION
(of familiar words)

increasingly
strategic

SKILLED READING:
Fluent execution and
coordination of word
recognition and text
comprehension.

increasingly
automatic

The image, courtesy of the author, originally appeared in the following publication: Scarborough, H. S. (2001). Connecting early language and literacy to later reading (dis)abilities: Evidence, theory, and practice. In S. Neuman & D. Dickinson (Eds.), *Handbook for research in early literacy* (pp. 97–110). New York, NY: Guilford Press.

Breaking it Down - Clarifying Concepts!

PHONOLOGICAL AWARENESS			PHONICS
Hear: cup	Hear: c + up	Hear: c+u+p	See (or see & hear): c+u+p
1- word 1-syllable	Onset - "c" Rime - "up"	3-phonemes	3 - graphemes 3 - phonemes
Each syllable in a word contains a vowel sound.	Onset-rime pairs are within syllables. Onsets precede rimes, which contain the vowel sound.	Phonemes represent the number of sounds in a word, not the alphabet letters (i.e., **graphemes**).	Knowledge of letter (grapheme)-speech sound (phoneme) associations is used to decode words.

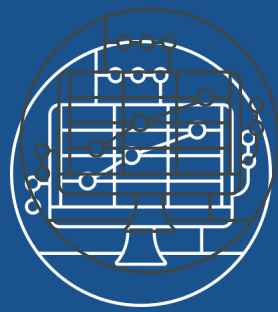# Application Activities Using WORD Force

Truist WORD Force

Elementary school early literacy program launched by Truist in January 2020

COURSE OVERVIEW

Acting as the commander of a rag-tag group of superheroes called the WORD Force, K-2 students develop a foundation in key reading skills by leveling-up through fun and impactful literacy games.

COURSE HIGHLIGHTS:

- Grade Level: K – 2nd Grade
- Course Structure: 15 Games with 5 levels each
- Game Length: 8-10 minutes per level
- Embedded instructional support

TOPIC AREAS

- Phonological Awareness (e.g., rhyming, phonemic awareness)
- Phonics (e.g., letter names and sounds, word building, word reading)
- Vocabulary (regular and irregular words)
- Spelling
- Reading Comprehension

Video Clip Activity - Watch for/Think of:

1. What it is: phonics and/or phonological awareness

2. Subskill or subskills addressed

3. Precursor and related skills

4. Subsequent skills

Sprouting Sounds Activity

Type your responses in the chat box.

1. What is it: phonics and/or phonological awareness? phonological awareness

2. List a subskill.   onset-rime awareness

3. List some precursors skills. word awareness, syllable awareness, rhyme awareness

4. List a subsequent skill. phonemic awareness

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Veggie Village Activity

Type your responses in the chat box.

1. What is it: phonics and/or phonological awareness? phonics

2. List a subskill or subskills addressed. letter names, phonemic awareness, letter-sound associations

3. List some precursor and related skills. rhyme awareness

4. List a subsequent skill. word decoding (e.g., CVC words like "cat")

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WORD Force 1.0 - Game Set 1 Skills

Game Set 1: Phonological awareness and letter sounds/letter names

Sprouting Sounds	Raise A Rhyme	Veggie Village
In this mission, students will join a game hero in an adventure to plant new trees in the forest. They will hear the beginning or ending sound in a word and identify a picture with the same sound in the same position. This game will help students gain confidence in identifying words that have the same beginning or ending sounds.	In this mission, students will join a game hero in building a house for the McWhisker family. They will hear a word and identify another word that rhymes with it in order to build the house. This game will help students feel confident in identifying rhyming pairs	In this mission, students will join a game hero in planting a community garden. They will listen to the sound and select the matching letter or letters to turn on the water hose. This game will help students gain confidence in matching English speech sounds with their alphabet letter representations.
Onset-rime awareness Phonemic awareness	Onset-rime/rhyme awareness	Letter-sound associations (alphabetic principle) Underlying phonemic awareness skills

Visit **wordforce.everfi.com** for more information about WORD Force.

User Behavior and Performance Analysis

Student Profile

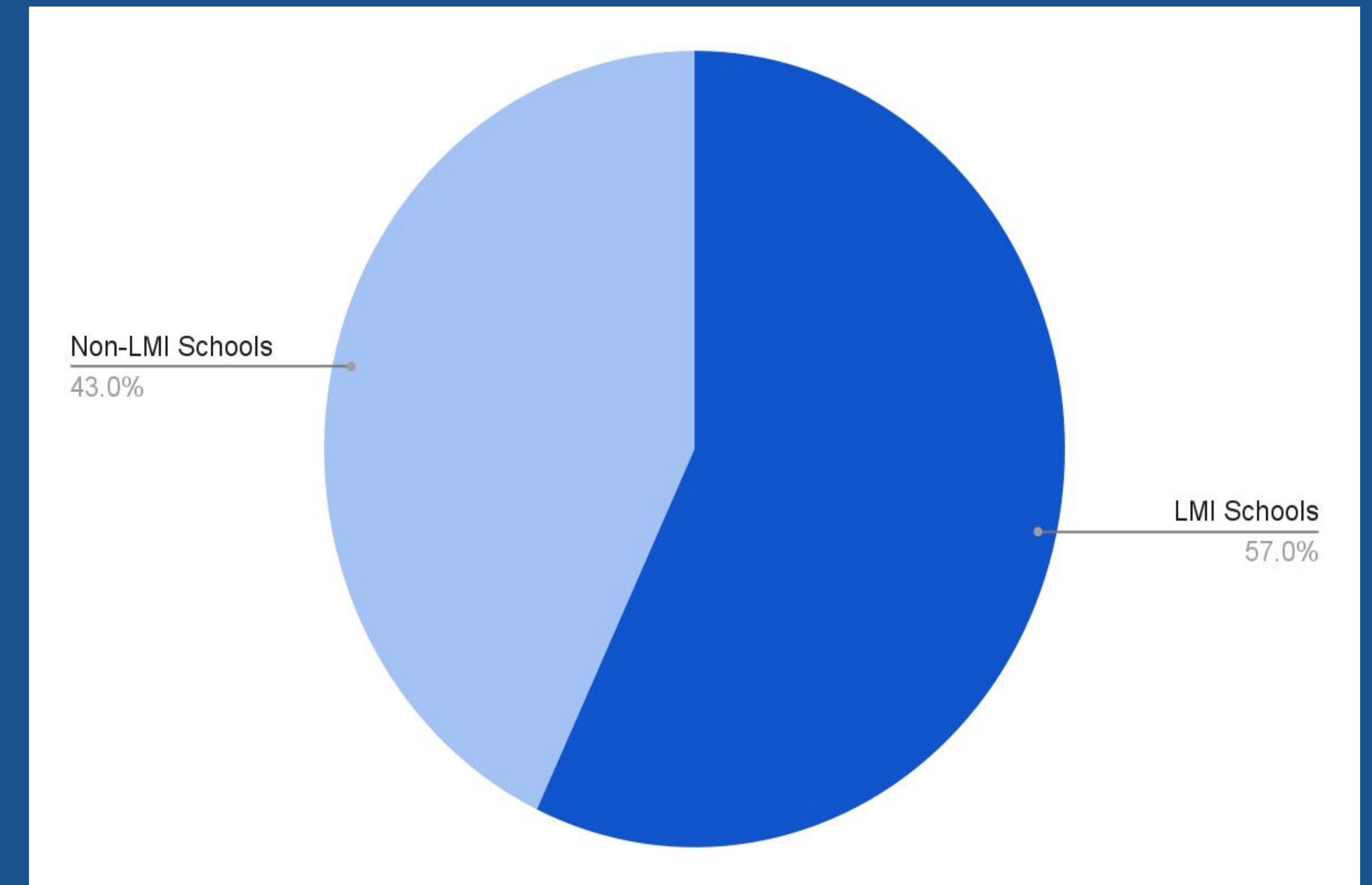During the 2021-2022 school year, there were 75,848 students who took the Word Force course. The course reached 49 U.S. states + Washington D.C and Puerto Rico and 9 Canadian provinces.

❏ 57% of the students were from low-to-moderate income schools (LMI).

❏ The vast majority of students (94%) were in grade 3 or lower.

Students by LMI/Non-LMI Schools

Non-LMI Schools
43.0%

LMI Schools
57.0%

How did the Students Use the Course?

Students had 3.1 active days on which they interacted with the content with 1.6 game plays on each active day and each student played a 3.7 different games.

❏ Students from LMI schools tended to have more active days on which they interacted with the content.

❏ Students from LMI schools also played more games than did non-LMI school students.

	# of Games Played	# of Active Days	Avg # of Game Plays/Day
Overall	3.7	3.1	1.6
LMI Students	3.8	3.2	1.8
Non-LMI Students	3.4	2.9	1.5

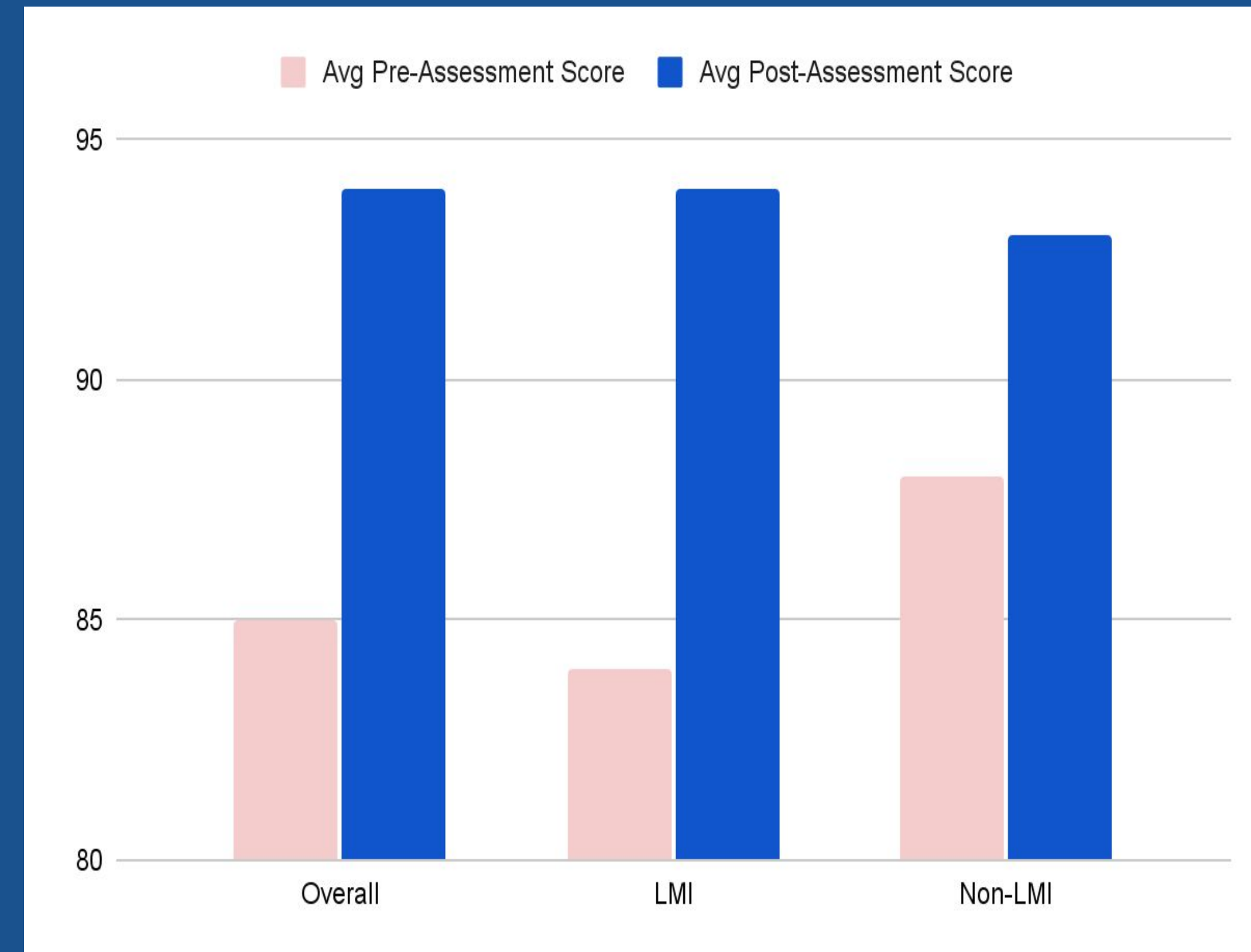# Assessment Score Change Overview

On average, the assessment score changed from 85 in the pre-game assessment to 94 in the post-game assessment.

❏ LMI students had larger score change (84 to 94, 12%) compared to non-LMI students (88 to 93, 6%)

Note:

*Only the students who completed both the pre- and post-game assessments for at least one game were included in this analysis.

Assessment Score Change by Games

Overall, assessment scores improved in all the 15 games.

❏ The students showed the largest improvement in the game set focusing on basic sentence building skills (Robot Recycler, Suffix Summit and Littered Lagoon).

Games	Pre-Assessment Score	Post-Assessment Score	Improvement
Sprouting Sound	84	92	10%
Raise-a-Rhyme	79	96	22%
Veggie Village	92	99	8%
Wandering Words	89	96	8%
Cotton Candy Breakdown	93	99	6%
Stellar Speller	91	95	4%
Dictionary Dig	87	95	9%
Icy Letter	81	97	20%
Conserve-a-Word	84	96	14%
Robot Recycler	75	95	27%
Suffix Summit	67	92	37%
Littered Lagoon	78	94	21%
Word Force Adventures	91	99	9%
Sea Stories	84	95	13%
Solar Sentences	83	96	16%

Assessment Score Change by Student LMI Status

❏ On average, LMI students' assessment scores improved by 8%, whereas the assessment scores of non-LMI students improved by 5%.

❏ The students from LMI schools achieved greater improvement in all the games except for Stellar Speller and Robot Recycler, in which the average score improvement was the same for LMI and non-LMI students.

Game	Improvement _ LMI	Improvement _ Non-LMI
Raise-a-Rhyme	13%	9%
Sprouting Sound	6%	3%
Veggie Valley	7%	5%
Wandering Words	3%	2%
Cotton Candy Breakdown	6%	4%
Stellar Speller	4%	4%
Dictionary Dig	8%	5%
Icy Letters	16%	11%
Conserve-A-Word	7%	3%
Robot Recycler	17%	17%
Suffix Summit	27%	21%
Littered Lagoon	12%	5%
Word Force Adventures	7%	4%
Sea Stories	7%	5%
Solar Sentences	12%	9%
Overall	**8%**	**5%**

# User Behavior and Assessment Score Change: In-Game Performance

To understand the relationship between user behaviors and the improvement students made on the assessments, we used a rigorous multivariate analysis.

This analysis identified the most important user behaviors associated with changes in assessment scores and the unique contribution of each behavior.

> Higher in-game performance was associated with greater assessment score improvement.

> The boosting effect of better in-game performance on assessment score improvement was two times larger among LMI students.

In-Game Performance and Expected Assessment Score Change

Expected % of Assessment Score Improvement

Avg. In-Game Performance

0
100
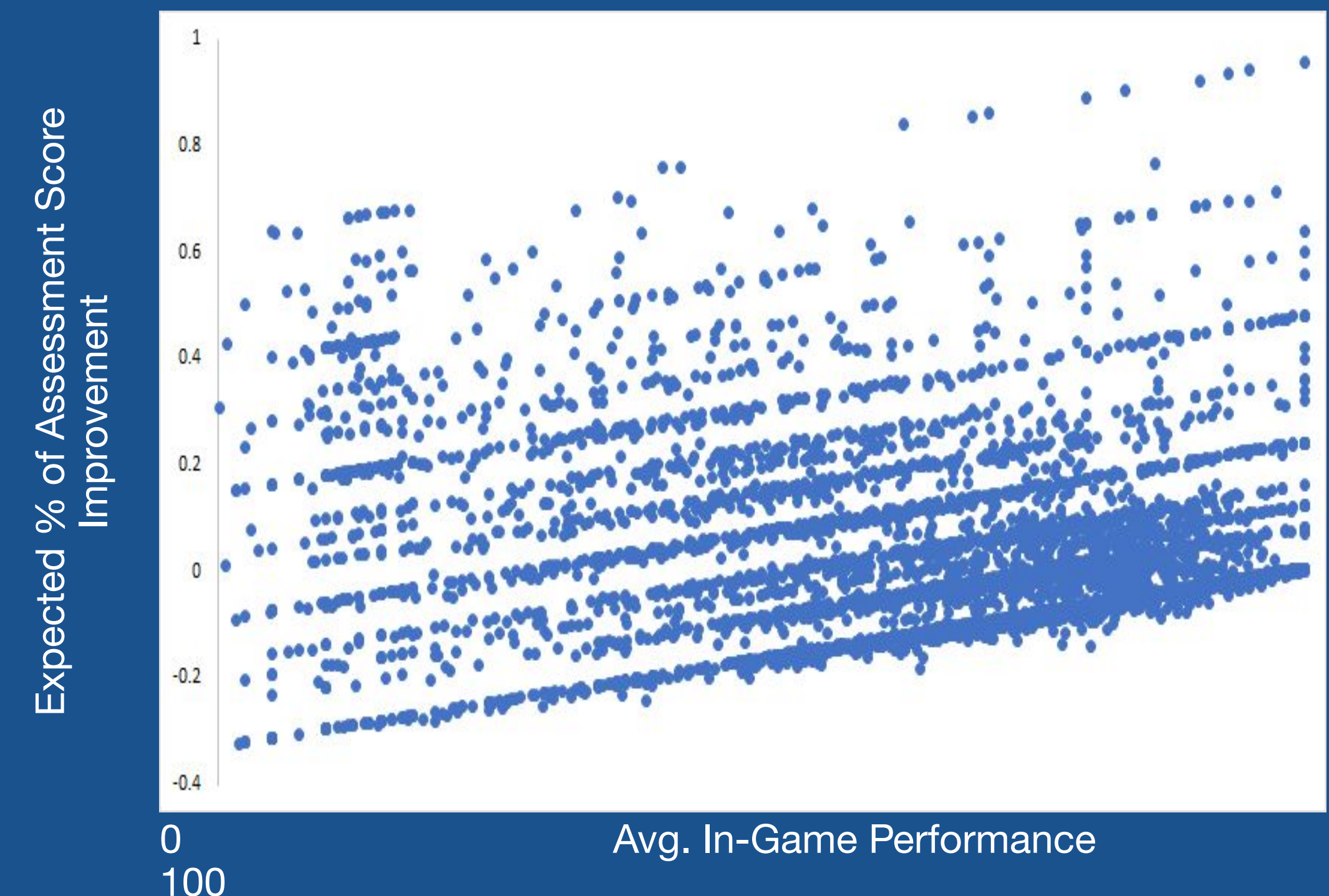
Number of Games Played & Consistency of Usage

Students who used the course more consistently, i.e., playing roughly the same number of game plays on each active day, tended to have greater assessment score improvement.

The analysis also revealed that students who played more games tended to have greater improvement in their assessment scores.

Students who played the games more consistently had greater improvement in the skill assessment.

Playing more games is associated with greater improvement in the skill assessment.

Consistency of Use and Expected Assessment Score Change
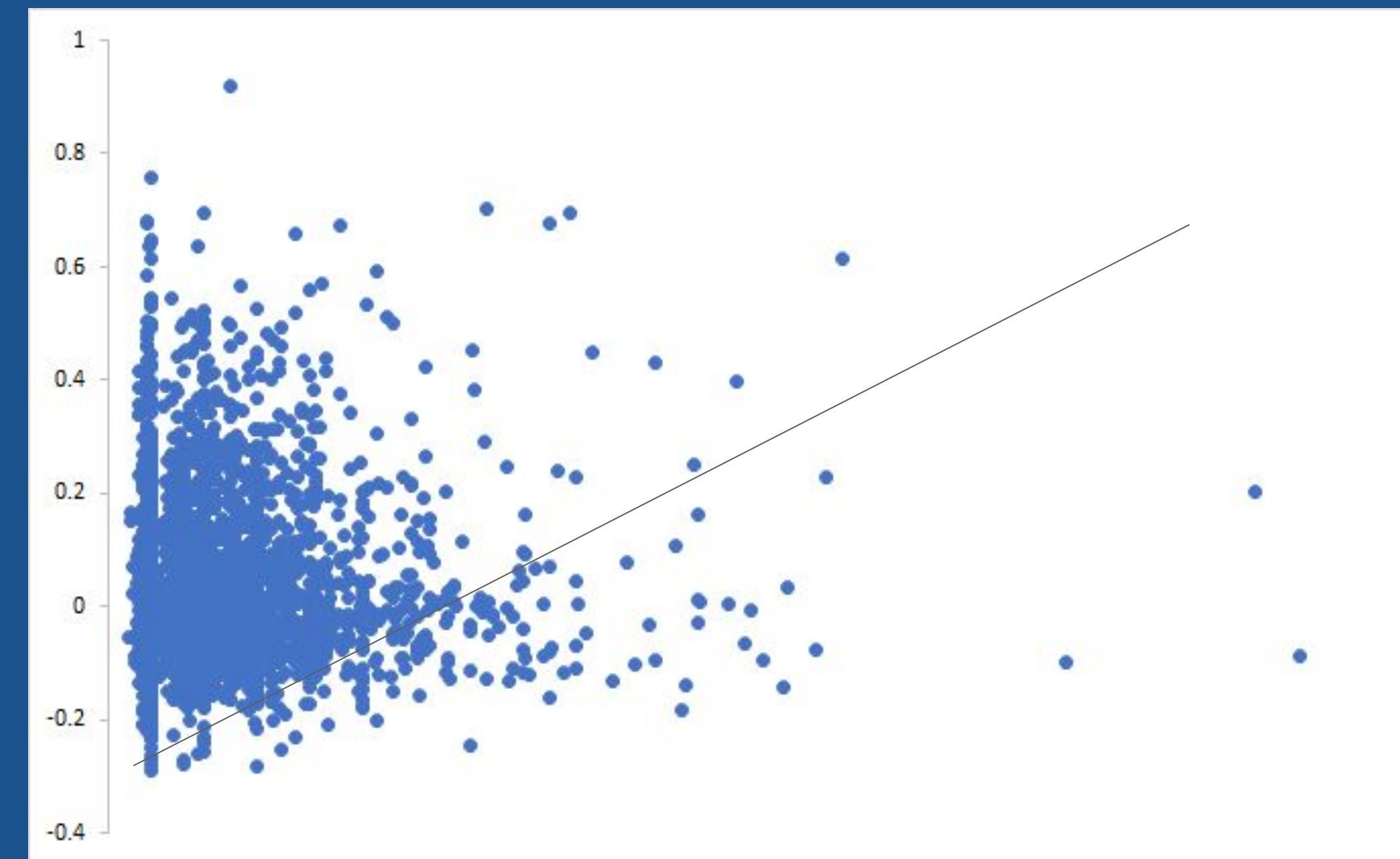
Low Consistency of Use   High Consistency of Use

Summary

- Understanding the relationship between spoken language and written language is critical to supporting early literacy development.

- Digital learning programs can provide practice on tasks taught by educators as well as inform instructional decisions (e.g., differentiated instruction).

- Applying knowledge of early literacy skill development to interpretation of data from early literacy digital learning programs facilitates personalized instruction.