Reading Horizons

ARKEN RESEARCH

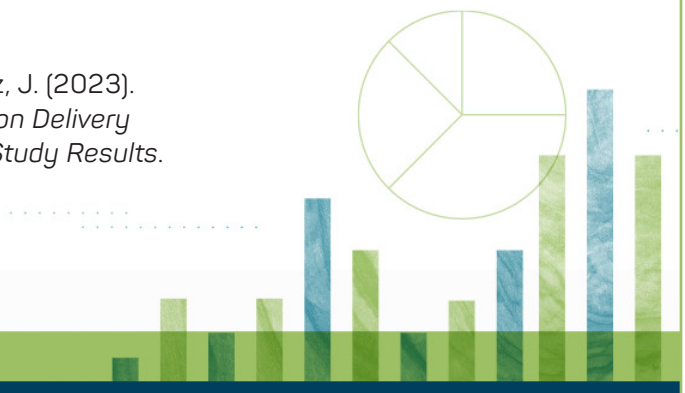
The Impact of the *Reading Horizons Discovery®* Lesson Delivery Tool on Student Decoding and Encoding Skills:

Pilot Study Results

Shelby Danks, Ph.D.
Principal Advisor
ARKEN RESEARCH

Suggested citation:

Danks, S., Clark, D., Gowda, P., Burwell, R., & Gonzalez, J. (2023). *The impact of the Reading Horizons Discovery® Lesson Delivery Tool on Student Decoding and Encoding Skills: Pilot Study Results.* ARKEN RESEARCH, LLC: Austin, TX.



Where reading momentum begins

TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

The *Reading Horizons Discovery®* Lesson Delivery Tool (RHDLDT) was designed during the 2021–2023 academic years to address challenges teachers face in the implementation of the science of reading. The RHDLDT streamlines science-based, phonics instruction for teachers. With lesson content, resources, data, and differentiation all accessible on their devices, teachers have everything they need for foundational literacy instruction at their fingertips.

As a part of a large-scale pilot study conducted from August 2022 through March of 2023, the research team at Reading Horizons, in collaboration with Arken Research, undertook a series of rapid-cycle studies to evaluate the impact of the RHDLDT on growth in K–2 student encoding and decoding skills. Additionally, the study aimed to explore the classroom-level conditions under which the tool proved most successful. The purpose of this study was to identify opportunities for improvement before the final tool was launched in the fall of 2023. Key findings from the pilot study are summarized in the table below.

KEY FINDINGS

Teacher Usage	Impact of the RHDLDT	Key Practices of Most Successful Teachers
• Weekly active users varied over time and decreased in the spring semester. • The average time spent preparing a lesson was slightly higher than the desired 10-minute goal. • The average total lesson delivery time was slightly lower than the desired 40-minute goal. • Consistent use of the Lesson Insights page was as high as expected.	• An average of 52% of students demonstrated proficiency on daily Skill Check 1 (a measure of encoding/decoding) after the Whole-Class Lesson Delivery component of instruction across 64 lessons. • Student performance in key decoding skills held constant as the curriculum increased in difficulty. • An average of 67% of students demonstrated proficiency on Skill Check 2—an increase of 15%—after completing the small group and software practice components of the lesson. • In Grade 1, changes in scores from daily Skill Check 1 to Skill Check 2 were more pronounced in lessons where students were exposed to new content. • Students in classrooms where teachers implemented the full instructional model within the RHDLDT scored higher on Skill Check 1 throughout all lessons within the curriculum.	• A few teachers consistently empowered 100% of students to achieve proficiency by the end of the lesson on Skill Check 2, all within under an hour of total instructional time. This held true even for students who demonstrated below average proficiency on the initial Readiness Check at the beginning of the study. • The most successful teachers implemented all key instructional practices within the RHDLDT, except for the ready-made Small Group Resources, likely due to limited resource availability at that time.

2. INTRODUCTION

Despite access to and general satisfaction with the variety of high-quality instructional materials available on the market for early literacy instruction, teachers still report a plethora of unmet needs and challenges that threaten implementation of the science of reading:

- Lockstep versus Mastery-Based Progression: Teachers are often expected to teach lessons in lockstep with a district pacing guide, despite the importance of mastery-based progression for literacy among younger learners. Educators struggle to manage mastery-based progression with a full class of students who perform at varying levels.
- Immediate Transfer: Educators often lack the time and knowledge of how to provide opportunities for immediate transfer of skills taught during Whole-Class Lesson Delivery.
- Curriculum-Based Assessment: While teachers have access to a variety of diagnostic and progress monitoring assessments that illuminate student skill gaps, teachers often lack access to curriculum-based assessments that help them evaluate the impact of their day-to-day instruction.
- Software Alignment: Teachers struggle to align available digital literacy programs that provide reinforcement with their daily classroom instruction. Software tools often provide a variety of reports on student performance but fail to provide teachers with the data they need to inform daily small groups or lesson pacing.
- Resources for Differentiation: Teachers have access to too many resources yet struggle to match resources to daily student needs.

The *Reading Horizons Discovery®* Lesson Delivery Tool (RHDLDT) was designed during the 2021–2023 academic years to address many of these common challenges reported by teachers. The tool addresses these challenges through a comprehensive solution that streamlines science-based, phonics instruction for teachers. With lesson content, resources, data, and differentiation all accessible on their devices, teachers have everything they need for foundational literacy instruction at their fingertips. The user-friendly tool empowers teachers by providing instant access to the necessary resources precisely when they need them.

3. THE *READING HORIZONS DISCOVERY®* LESSON DELIVERY TOOL (RHDLDT)

The RHDLDT features a teacher instructional cycle that starts with a Readiness Check assessment. It then guides teachers seamlessly through the instructional cycle, encompassing Lesson Preparation, Whole-Class Lesson Delivery (WCLD), skill assessment via a Skill Check (post WCLD), and differentiated transfer activities made available via software and small Groups and Centers. Once students complete their differentiated activities, they complete a second Skill Check (post small groups and software practice). Teachers use the results to make a data-driven Decision on whether to progress to the next lesson or reteach it (see Figure 1). This cohesive cycle effectively connects the curriculum, software, and teacher, resulting in a blended learning experience.

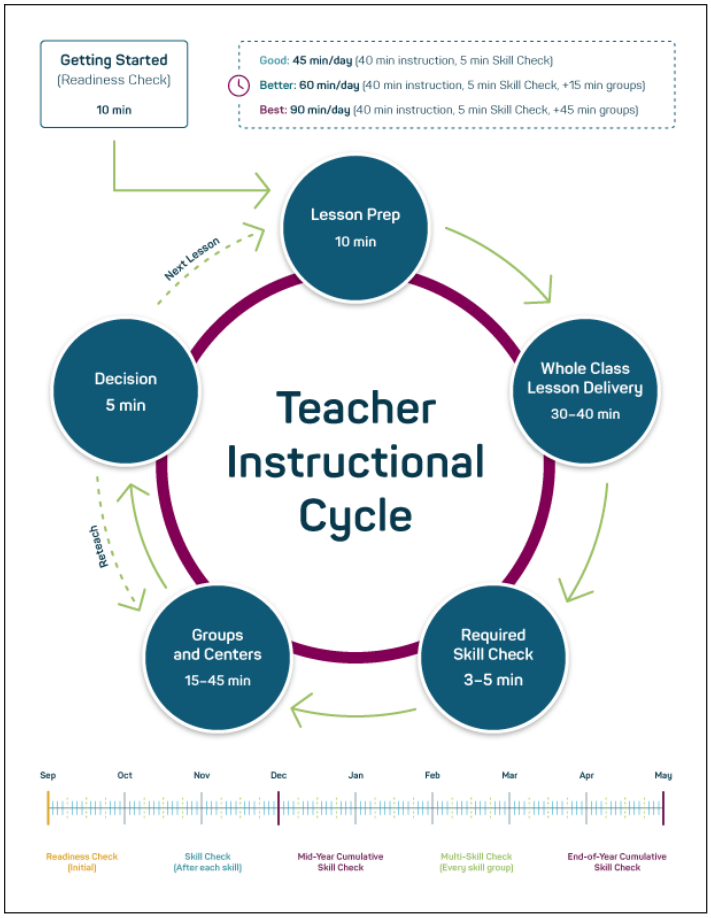


Figure 1. The Instructional Model Embedded within the RHDLDT

During the alpha phase of the pilot project, the RHDLDT included a variety of design features that empowered teachers to deliver the full instructional model within a 60-minute daily lesson:

- Whole-Class Lesson Delivery (WCLD) includes the following features:
  - Grade-Level Specific Scope and Sequence: Grade-level specific lessons broken up by subskill.
  - Integrated Lesson Plans: Daily scripted lessons that include the key components for effective reading instruction.

    - Student Observation Tool: A check box in software that enables teachers to flag which students may need additional support during small group time.

- Automated Skill Checks: These are digital curriculum-based assessments that are automatically assigned to students and provide teachers with real-time feedback about the impact of instruction.
- Ready-Made Groups and Centers Resources: Students are automatically assigned to a recommended small group for differentiated instruction based on teacher observation and Skill Check results. Teachers are provided ready-made resources to use with each group of students.
- Decision Point/Skill Insights Page: Digestible data for each day's lesson that communicates the impact of instruction and a recommendation about next steps.

4. THE PILOT STUDY

BACKGROUND AND PARTICIPANTS

As a part of a large-scale pilot study conducted from August 2022 through March of 2023, the research team at Reading Horizons, in collaboration with Arken Research, undertook a series of rapid-cycle studies to evaluate the impact of the *Reading Horizons Discovery®* Lesson Delivery Tool (RHDLDT) on growth in K–1 student decoding skills. Additionally, they explored the classroom-level conditions under which the tool proved most successful. The pilot study involved 82 teachers and over 1,400 kindergarten and first-grade students across four US school districts. Each participating teacher had previous exposure to the *Reading Horizons Discovery®* method of phonics instruction in prior years but had no experience using the full RHDLDT, a recent enhancement to the *RH Discovery* curriculum.

While the primary data collection occurred from August through February, teachers were permitted to continue using the materials throughout March, if they desired. Most teachers who extended their participation through March were those who had not completed some lessons by February 2023.

RESEARCH QUESTIONS

The purpose of the pilot study was to 1) explore the impacts of the key components of the *Reading Horizons Discovery®* Lesson Delivery Tool (RHDLDT) on student skills; 2) identify the practices and methods that most significantly improved student growth in decoding, as measured by daily, end-of-lesson Skill Check scores; and 3) identify key product improvements to address before the final launch of *RH Discovery* for the 2023–2024 school year.

The research questions (RQ) that were explored included the following:

1. **RQ1. General Usage of the RHDLDT**
    a. To what extent did teachers across the 82 classrooms implement the key design features of the RHDLDT?
2. **RQ2. The Impact of the RHDLDT**
    a. What is the impact of the Whole-Class Lesson Delivery (WCLD) component of the instructional model, as measured by initial Skill Check 1 scores?

b. What is the impact of the small group and software practice components of the instructional model, as measured by growth from initial to post student Skill Check scores?

c. How does student performance differ between students whose teachers administered only the first Skill Check versus those who administered both?

3. **RQ3. Instructional Practices of Most Successful Teachers**

a. What were the instructional practices of the most successful teachers, as defined by those whose students demonstrated the most growth on Skill Check scores?

METHODS

For Research Questions 1a, 2a, 2b, and 2c: Given the digital nature of the RHDLDT, the research team was able to define a variety of usage and student learning outcome indicators to evaluate the research questions for the alpha study. While a larger set of indicators was defined and used as a part of the pilot, those listed in Table 1 below were found to be the most useful for addressing the guiding research questions of this study.

Table 1. Usage and Learning Outcome Indicators

Indicator	Administration/Frequency
***RH Discovery* Lesson Delivery Tool Components**	
Weekly active usage/percentage of teachers who logged in at least three times per week	Daily, during the Whole-Class Lesson Delivery (WCLD) component of the lesson
Average time spent preparing a lesson	Daily, before lesson delivery
Average total lesson delivery time	Daily, during all parts of the RHDLDT
Average number of student observation clicks	Daily, during the WCLD component of the lesson
Other Usage Behaviors	
Average number of broadcast clicks per lesson	Daily, during the WCLD component of the lesson
Average time spent viewing ready-made groups and centers resources	Daily, during the small group component of the lesson
Small group assignments	Daily, during the small group and software components of the lesson
Average time students spent in software	Daily, during the software practice component of the lesson
Student Learning Outcomes	
Initial Readiness Check	Beginning of the year/pilot study
Skill Check 1 (post WCLD)	Daily, after each WCLD component of the lesson
Skill Check 2 (post small group/software practice)	Daily, at the end of the small group or software component of the lesson, as time allowed, and if needed

For Research Question 3a: In addition to exploring usage and performance across all teachers and students in the pilot study, researchers used a variety of analytic tools to identify the teachers from the larger pool of participants who demonstrated the greatest student growth.

By November of 2023, the research team had collected sufficient data to classify teachers based on their level of *implementation integrity*, observable through usage and behavioral measures. The criteria for defining implementation integrity included dates active, number of events and page views (including the broadcasting tool), time spent, total students included, observation checklist usage, and the consistent administration of Skill Checks. A total of 13 teachers from a single district across multiple grade levels satisfied each of these criteria and were therefore selected to participate in a more detailed observational study.

In January of 2023, the 13 selected teachers were invited to and agreed to participate in an in-depth observational study of their use of the RHDLDT for the remainder of the pilot project. These teachers were encouraged to implement the RHDLDT as intended, continuing to use the Whole-Class Lesson Delivery (WCLD) component, as well as the small group and software practice components, throughout the study. As a hygiene measure and to ensure alignment between usage analytics and teacher self-reports, each participant was also asked to complete a daily diary log to document their implementation and use. By the end of the study, four teachers whose students demonstrated the most growth from Skill Check 1 to Skill Check 2 were identified, and their instructional practice data were used to explore the classroom-level conditions under which the tool proved most successful.

About the Skill Checks: The Skill Check empowers teachers to check for student understanding of each day's skill lesson, as well as to inform small groups for instruction and differentiated learning activities for extended transfer. Administered at the end of each day's Whole-Class Lesson Delivery, and a second time after the student completes the differentiated learning activities (Danks, Hurst, Diaz, & Clark, 2023), the Skill Check measures a student's ability to encode a word. This has been demonstrated to be one of the most effective methods for assessing student decoding as well (Weiser & Mathes, 2011).

The RHDLDT reports the percent accuracy for each student on the Lesson Insights page. An 80 percent score or above indicates students' understanding of key concepts (Danks, Hurst, Diaz, & Clark, 2023). The tool reports and automatically groups students into one of three groups after each Skill Check administration: students who Need Support, students who Need Practice, and students who are proficient in the skill and Need Enrichment. For each of these groups, ready-made small group resources are made available for teacher use.

5. RESULTS AND IMPLICATIONS

RQ1. GENERAL USAGE OF THE RHDLDT

RQ1a. To what extent did teachers across the 82 classrooms use the key design features of the RHDLDT?

To help guide the product development team in making iterative improvements throughout the pilot study period and to provide additional context for the study's findings, researchers assessed the extent of teacher engagement with the most significant key design features of the RHDLDT. Between September and March of 2024, several indicators were measured: 1) the percentage of teachers classified as weekly active users, 2) the average time spent on lesson preparation, 3) the average total time taken for lesson delivery, 4) average number of student observation clicks, and 5) the percentage of teachers who used the Insights Page.

Results from this time frame showed the following:

- **Weekly active users** (measured based on the percentage of teachers who logged in at least three times per week over the course of the study), varied over time, with the heaviest usage rates occurring from November through February (Figure 2).
- The **average time spent preparing a lesson** was 14 minutes, 25 seconds. Grade 1 teachers spent less time on average (13 minutes, 4 seconds) compared to kindergarten teachers (20 minutes, 54 seconds). This time exceeded the desired 10-minute goal.
- The **average total lesson delivery time** for the 82 teachers in the study over the course of the study was 37 minutes, 18 seconds. Grade 1 teachers spent longer in lesson delivery on average (40 minutes, 19 seconds) than kindergarten teachers (34 minutes, 27 seconds). This average time met the goal of being under 40 minutes.
- The **average number of student observation clicks** across the entire study time period was 69.12.
- The **percentage of teachers who use the Decision Point/Lesson Insights Page** varied over time, with the heaviest usage rates occurring from October through February (Figure 3).

IMPLICATIONS

The implications for product improvement based on many of these key findings are shown in Table 2.

Table 2: Key Design Feature Usage: Implications for Product Improvement or Future Research

Key Findings	Implications for Product Improvement or Future Research
• Weekly active users varied over time and decreased in the spring semester.	• Identify inhibitors to meaningful use to sustain habits of consistent use over time.
• The average time spent preparing a lesson was slightly higher than the desired 10-minute goal.	• Identify inhibitors to effective lesson planning to decrease time spent preparing a lesson.
• The average total lesson delivery time was slightly lower than the desired 40-minute goal.	• Identify inhibitors to effective pacing to sustain average lesson delivery time.
• Consistent use of the Lesson Insights page was as high as expected.	• Continue to validate the value of the daily Skill Check and associated reporting of student results.

RQ2. THE IMPACT OF THE RHDLDT

RQ2a. What is the impact of the Whole-Class Lesson Delivery (WCLD) component of the instructional model, as measured by initial Skill Check 1 scores?

A total of 1,298 students completed both the initial Skill Check 1 and Skill Check 2 during the study period (September through March). In aggregate, 52% of these students demonstrated proficiency on Skill Check 1 after the WCLD component of instruction across 64 lessons. This indicates that teachers were moderately effective in their whole-class direct instruction, although nearly half of the students still required practice or support on key concepts (Figure 4).

The cumulative impact of the RHDLDT instructional model was also evaluated through a time series analysis of Skill Check 1 outcomes for kindergarten and first-grade students. Figures 5 and 6 illustrate how student performance on Skill Check 1 *held constant over the course of the 64 lessons* embedded within the RHDLDT, despite an increase in lesson rigor—a key feature of the mastery-based progression design. The percentage of students achieving proficiency immediately after the WCLD component showed natural, common cause variation over time for both kindergartners and first graders. This indicates that, on average, students improve their key decoding skills as the curriculum progressively becomes more challenging.

For lesson sequences where scores were lower and a special cause variation was observed (e.g., Lesson Groups 37–43 for kindergarten or Lesson Groups 35–41, 48–52, or 48–52 for first grade), additional investigation into the root causes of underperformance was completed. These post hoc analyses corroborated previous findings that students tend to score higher on skills like *S*-blends and *L*-blends, but struggle with more challenging skills, such as Phonetic Skill 1. Future research demands additional analysis into item difficulty and discrimination and how these correlate with other outcomes.

RQ2b. What is the impact of the small group and software practice components of the instructional model, as measured by growth from initial to post Skill Check 2 scores?

Of the 1,298 students who completed both the initial Skill Check 1 and Skill Check 2 during the study period, 67% of students demonstrated proficiency on Skill Check 2, marking an increase of 15% in students proficiency (refer to Figure 4). This demonstrates the additional contribution of the small group and software practice components of the instructional model.

Given that many students in Grade 1 had been previously exposed to the *RH Discovery* curriculum as kindergarteners, the research team sought to compare changes in scores from Skill Check 1 to Skill Check 2 for the content that included some review from kindergarten versus the content that was new to the Grade 1 curriculum. As illustrated in Figures 7 and 8, the changes in scores from Skill Check 1 to Skill Check 2 were smaller in magnitude for the review content than were the changes that were detected for new content, where the changes in scores were more dramatic. This indicates that the small group and software practice components of the instructional model were more useful in instances where students were exposed to new content.

RQ2c. How does student performance differ between students whose teachers only administered the first Skill Check versus those who administered both?

All 82 teachers who participated in the study were instructed during professional learning sessions to implement the full instructional model within the RHDLDT. This includes the administration of both the first and second Skill Checks for each lesson. However, despite their best efforts, not all teachers were able to implement the full model, as were previously observed in their usage patterns, as shown in Figures 2 and 3. Given the importance of implementing the full RHDLDT, researchers further delved into how partial implementation might have influenced differences in student performance, focusing on Skill Check 1 scores, for which data were available for all students.

Performance of students in classrooms where both the first and second Skill Checks were administered (meaning the teacher implemented the full model within the RHDLDT) was compared to that of students from classrooms where only the first Skill Check was administered (indicating partial implementation). Figures 9 and 10 illustrate that for both kindergarten and first-grade students, performance on the first Skill Checks tended to be higher among classrooms where both Skill Checks were administered. This trend persisted across both grade levels for the majority of the course, despite increasing curriculum difficulty over time.

These findings indicate a possible link between additional, unobserved measures of teaching effectiveness during the direct instruction/WCLD component and improved outcomes on Skill Check 1. It suggests that teachers who fully implemented the model likely adhered to other instructional aspects of the WCLD component as intended, producing higher scores on Skill Check 1. Future research should focus on observing teaching behaviors during the WCLD component that produced such desirable results.

IMPLICATIONS

The implications for product improvement based on many of these key findings are shown in Table 3.

Table 3: Impact of the RHDLDT: Implications for Product Improvement or Future Research

Key Findings	Implications for Product Improvement or Future Research
• An average of 52% of students demonstrated proficiency on Skill Check 1 after the WCLD component of instruction across 64 lessons. • Student performance in key decoding skills holds constant as the curriculum increases in difficulty.	• Continue to investigate ways to improve the WCLD portion of the curriculum. • Increase the usability of the lesson preparation, lesson projection, and student observation tools within the RHDLDT to ensure effective communication of key concepts during the WCLD. • Conduct additional analysis on item difficulty and discrimination, including how these correlate with other outcomes.

• An average of 67% of students demonstrated proficiency on Skill Check 2—a growth of another 15% of students after the small group and software practice components of the lesson.	• Finalize the development of all four software learning activities to empower students who Need Practice or Need Support. • Modify the item types to better match the mastery-based progression model for the software learning activities. • Continue to explore whether the small group and software practice components of the lesson are most effective for those who Need Practice or Need Support.
• In Grade 1, changes in scores from Skill Check 1 to Skill Check 2 were larger in magnitude for lessons where students were exposed to new content.	• Investigate how to reduce lesson length in instances where content is merely a review. • Continue to explore how the small group and software support extended practice.
• Students in classrooms where the teacher implemented the full instructional model within the RHDLDT scored higher on Skill Check 1 on all lessons throughout the curriculum.	• Conduct additional research to explore which teaching behaviors during the WCLD component produced desirable results. • Consider the use of the full instructional model as a proximal measure of student performance.

RQ3. INSTRUCTIONAL PRACTICES OF MOST SUCCESSFUL TEACHERS

RQ3a. What were the instructional practices of the most successful teachers, as defined by those whose students demonstrated the most growth on Skill Check scores?

Among the teachers who administered both Skill Checks and for whom growth data were available, four teachers' students consistently demonstrated the most growth, as measured by a high average percentage of students achieving proficiency on Skill Check 2. Table 4 shows that students from three of these classrooms consistently averaged 100% proficiency on Skill Check 2, and one of the classrooms consistently averaged 83% proficiency on Skill Check 2 (Table 4). *It should also be noted that these four classrooms had some of the lowest initial performances in the study, with an average proficiency of 50.3% on the pre-implementation Readiness Check, below the study-wide average of 55.2%. However, they surpassed the rest of the pilot study's participants on Skill Check 2 performance, as detailed in Table 4.*

Table 4 also summarizes the key instructional practices observed in each of these four successful classrooms. Evaluation of the average time spent for each of these steps showed great variation from teacher to teacher—a finding that is expected, given the importance of differentiating instruction based on the prior and cumulative knowledge of students. However, one surprising finding from this analysis is that each of the four teachers consistently implemented each of the key instructional practices that were embedded within the RHDLDT, with the targeted small group time being the one exception. There was evidence that only one of the teachers consistently spent time accessing or using the ready-made resources embedded in the tool for small groups and centers. This suggests that the cumulative practices of WCLD, meaningful observation, Skill Check administration, student software activities, and the use of the printed Student Transfer Books (which are not measured digitally with the RHDLDT) might be the most crucial elements contributing to student success within the curriculum.

Table 4. Key Instructional Practices of Most Successful Teachers

	Teacher A	Teacher B	Teacher C	Teacher D	Avg. Top 4 Teachers	Avg. All Pilot Teachers
Key Instructional Practices						
Whole-Class Lesson Delivery - 30+ minutes (average instructional time)	✓ (31:19)	✓ (36:19)	✓ (39:22)	✓ (40:32)	**(36:45)**	**(40:05)**
Use of Observation Tool (average number of clicks per lesson)	✓ (5)	✓ (12)	✓ (7)	✓ (2)	**6/lesson**	**9/lesson (of those who used it)**
Administration of both Skill Checks	✓	✓	✓	✓		
Use of Decision Point - Lesson Insights Page (average time on page)	✓ (35:10)	✓ (21:02)	✓ (9:26)	✓ (3:37)	**(13:36)**	**(3:23)**
Use of Student Software (average student time in software)	✓ (7:45)	✓ (10:50)	✓ (14:01)	✓ (10:48)	**(10:45)**	**(11:42)**
Use of Small Group Resources (average time viewing small group resources page)	✓ (18:59)	×	×	×		
Use of Student Transfer Books (printed versions)	✓	✓	✓	×		
Results						
AVERAGE PERCENT PROFICIENT ON READINESS CHECK	**47%**	**60%**	**52%**	**32%**		
AVERAGE PERCENT PROFICIENT ON SKILL CHECK 1	**82%**	**67%**	**33%**	**71%**	**48%**	**52%**
AVERAGE PERCENT PROFICIENT ON SKILL CHECK 2 (completion rate)	**100%** (69%)	**100%** (61%)	**83%** (40%)	**100%** (7%)	**96%**	**67%**
AVERAGE PERCENT CHANGE FROM SKILL CHECK 1 TO SKILL CHECK 2	+18%	+73%	+50%	+29%	+48%	+15%

IMPLICATIONS

The implications for product improvement based on many of these key findings are shown in Table 5.

Table 5: Key Instructional Practices: Implications for Product Improvement or Future Research

Key Findings	Implications for Product Improvement or Future Research
• A few teachers were able to consistently empower 100% of students to achieve proficiency on Skill Check 2 by the end of the lesson, all within under an hour of total instructional time. This held true even for students who demonstrated below average proficiency on the initial Readiness Check at the beginning of the study.	• Continue to explore causes of underperformance for students who still struggle to achieve proficiency by Skill Check 2 to ensure that a greater number of students can achieve proficiency. • Continue to explore which additional software activities and Skill Check 2 are needed for students who score well on Skill Check 1. Explore how these activities increase automaticity, particularly in cases when students can read but not spell accurately. • Continue to embed a greater number of activities that encourage transfer and automaticity as a part of mastery-based progression within the software learning activities. This progression includes 1) multiple choice; 2) marking/proving words; 3) application through word building; and 4) application through reading connected text (with speech recognition, as appropriate).
• The most successful teachers each implemented each of the key instructional practices within the RHDLDT, with the exception of the ready-made Small Group Resources (likely as a result of limited resource availability at the time of the study).	• Continue to recommend the use of the student software activities and the Student Transfer Books as key resources to increase scores on Skill Check 2. • Run a rapid-cycle study to explore the potential value of future ready-made Small Group Resources.

6. CONCLUSIONS

This pilot study sought to evaluate the impact of the RHDLDT on growth in K–2 student decoding skills, as well as to explore the classroom-level conditions under which the tool proved most successful. The findings indicated that while teachers varied in their usage and implementation of the RHDLDT as a whole, they consistently implemented the more innovative features that were unique to the improved version of the *Reading Horizons Discovery®* curriculum, particularly the Lessons Insights page.

This study also showed that the small group and software components led to an average increase of 15% in students demonstrating proficiency over the course of the program. It also showed that student performance in decoding skills on Skill Check 1 was higher in classrooms where teachers implemented the full instructional model. This suggests that teachers who implemented the full model as intended likely implemented other features within the Whole-Class Lesson Delivery (WCLD) component of the lesson as intended as well.

Finally, the study's findings demonstrated that the most successful teachers implemented each of the key instructional practices within the RHDLDT, with the exception of the ready-made Small Group Resources. This was likely due to these resources not being made available until the end of the pilot.

Future research on the impact of the RHDLDT on student growth should focus on the following:

- Identifying key instructional practices during the whole-class lesson delivery component that produce desired results on Skill Check 1.
- Evaluating the impact of the small group and software practice activities that most contributed to growth from Skill Check 1 to Skill Check 2.
- Exploring the relationship between student performance on curriculum-based assessments within the RHDLDT and external measures of reading performance.

7. REFERENCES

Danks, S., Hurst, S., Diaz, J., & Clark, D. (2023). *The Reading Horizons Discovery Skill Check Suite: Technical Report, 2023–2024*. Reading Horizons, Kaysville: UT.

Reading Horizons (2023). *Reading Horizons Discovery.* Retrieved https://readinghorizons.com/reading-curriculum/elementary-reading-curriculum/overview

Weiser, B., & Mathes, P. (2011). Using encoding instruction to improve the reading and spelling performances of elementary students at risk for literacy difficulties: A best-evidence synthesis. *Review of Educational Research*, 81(2), 170–200.

8. APPENDIX: FIGURES OF RESULTS

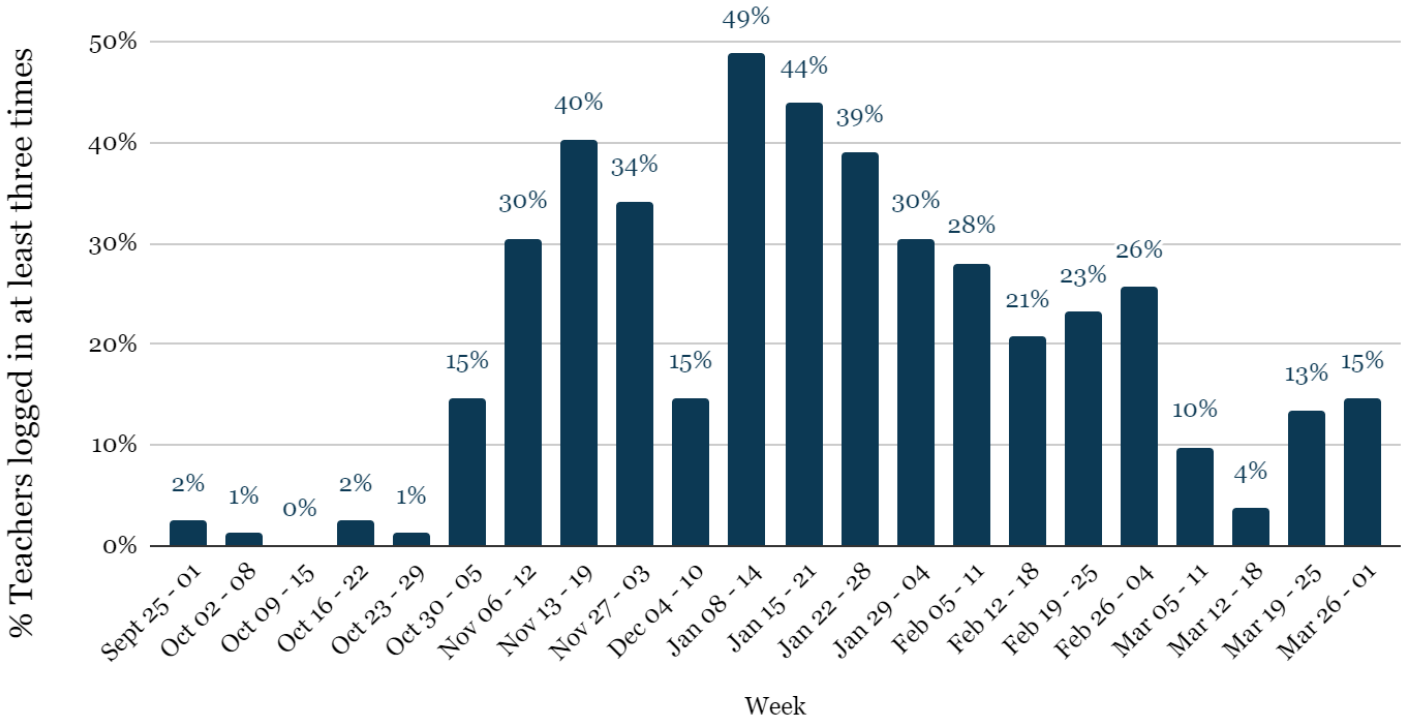


Figure 2: Weekly Active Users (September through March)

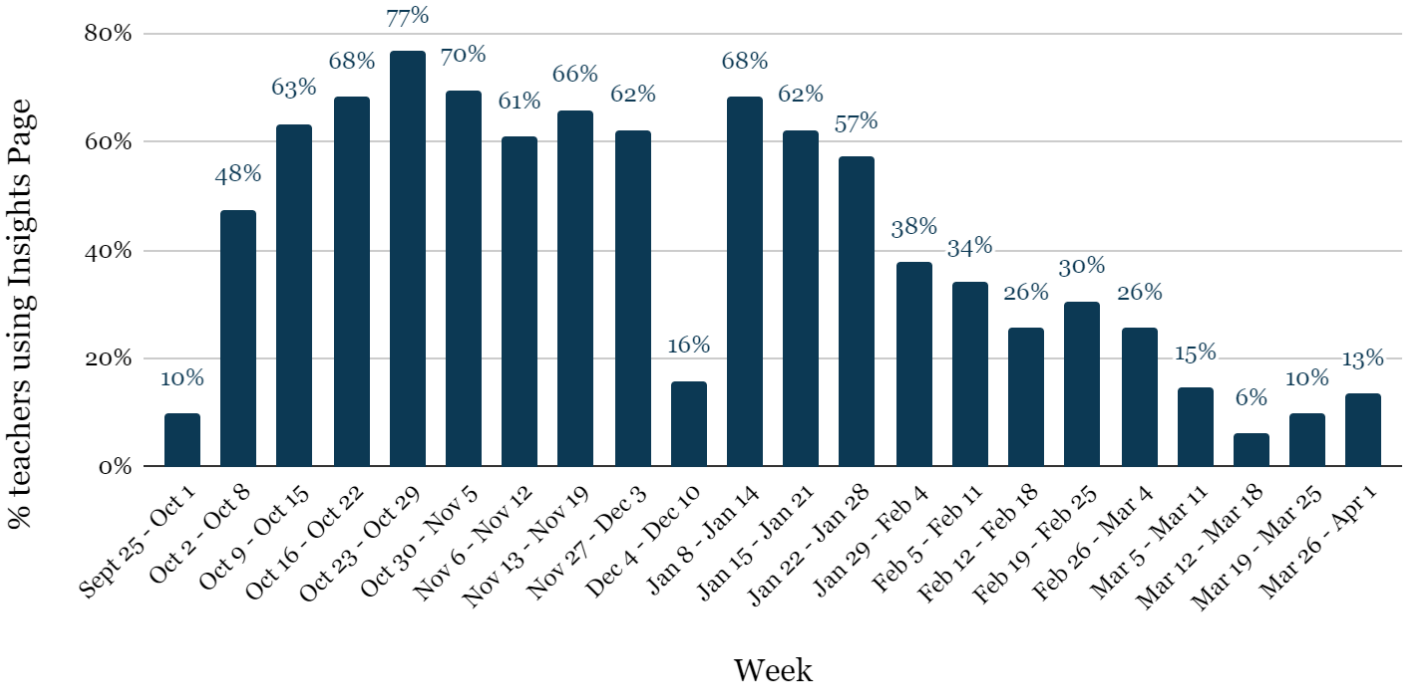


Figure 3: Teacher Use of Insights Page (September through March)

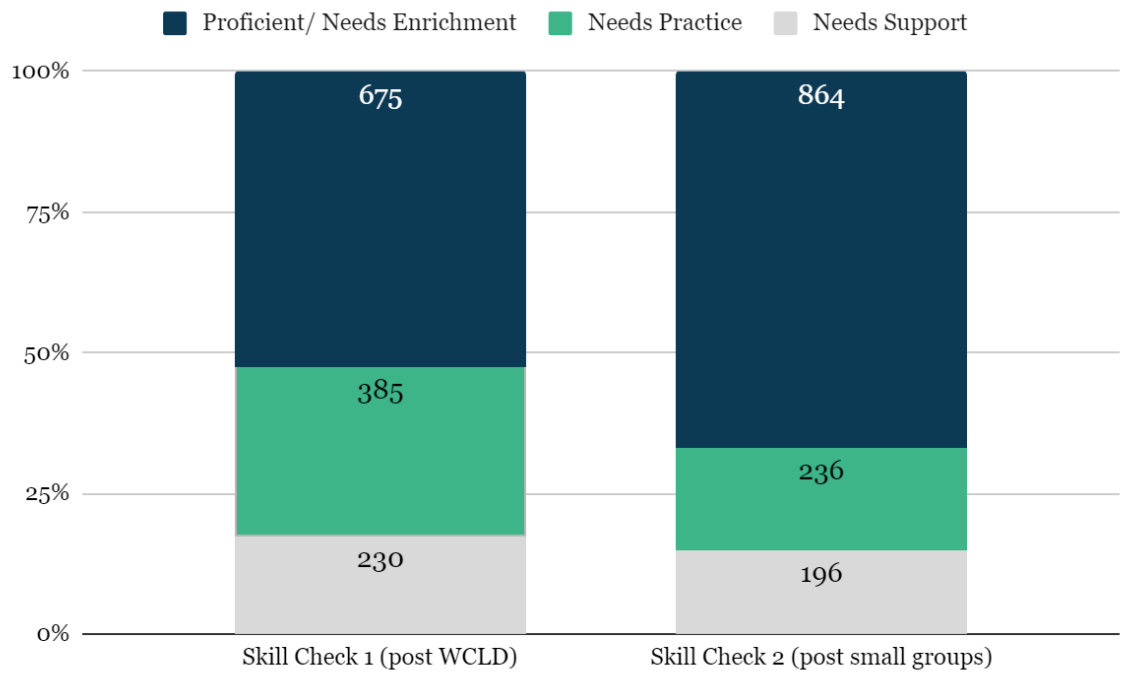


Figure 4: Changes in Skill Check Scores (whole study aggregate)

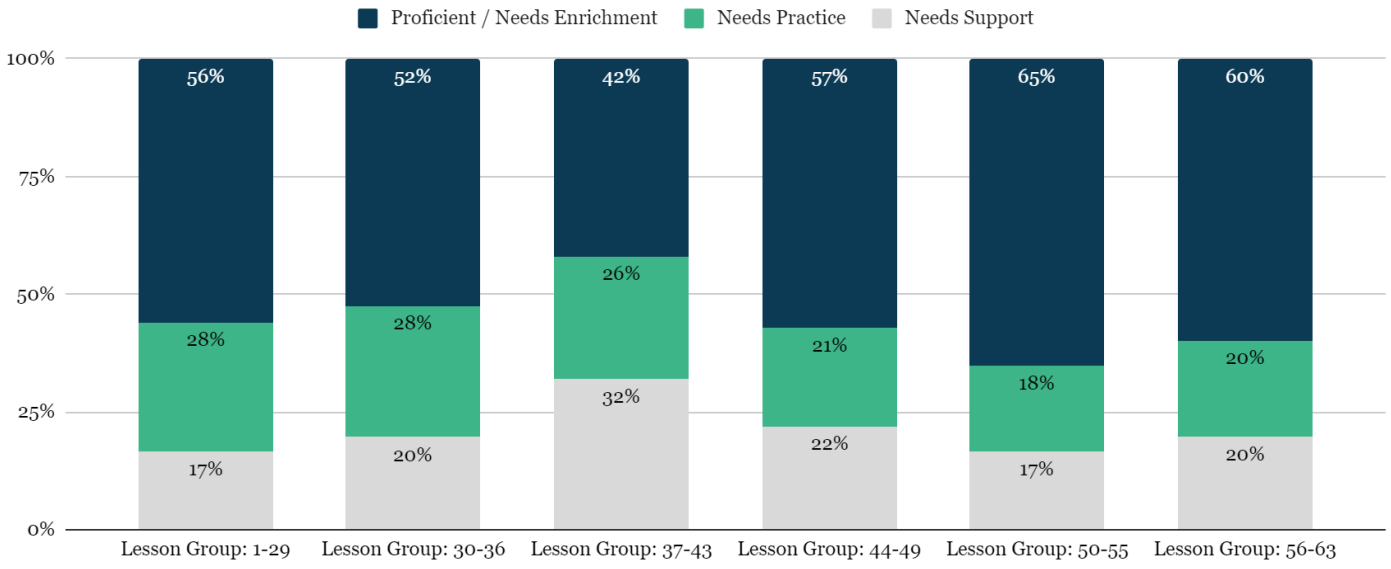


Figure 5: Kindergarten Skill Check 1 Scores (over time)

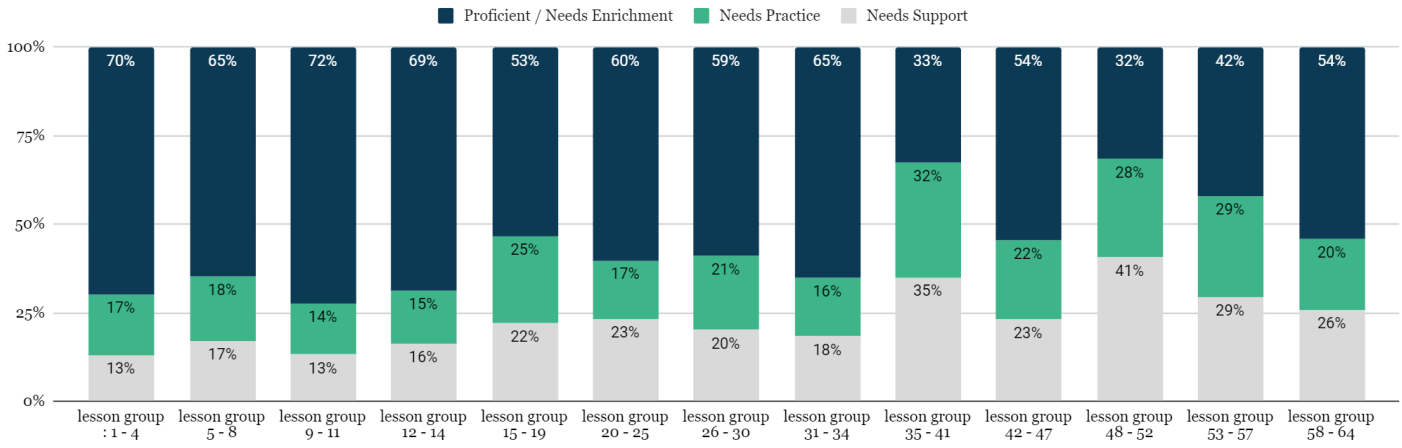


Figure 6: Grade 1 Skill Check 1 Scores Grade 1 (over time)

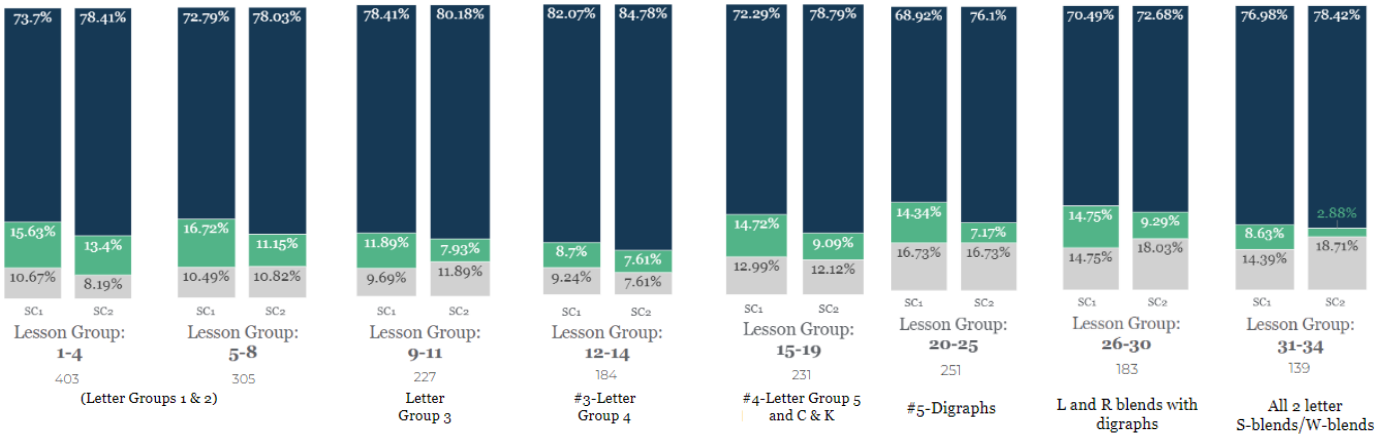


Figure 7: Changes in Grade 1 Skill Check Scores (includes some Kindergarten review content)

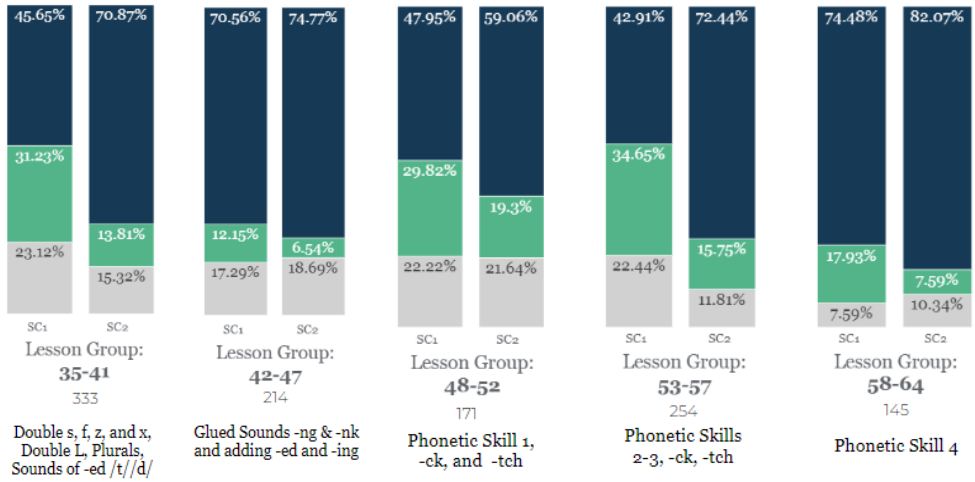


Figure 8: Changes in Grade 1 Skill Check Scores (new content only)

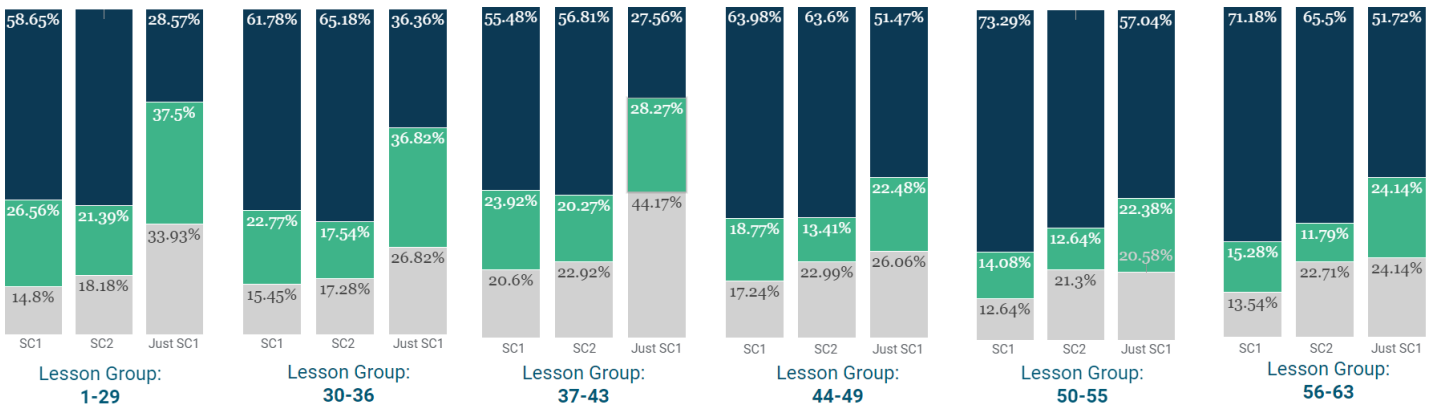


Figure 9: Changes in Kindergarten Skill Check Scores by Teacher Usage

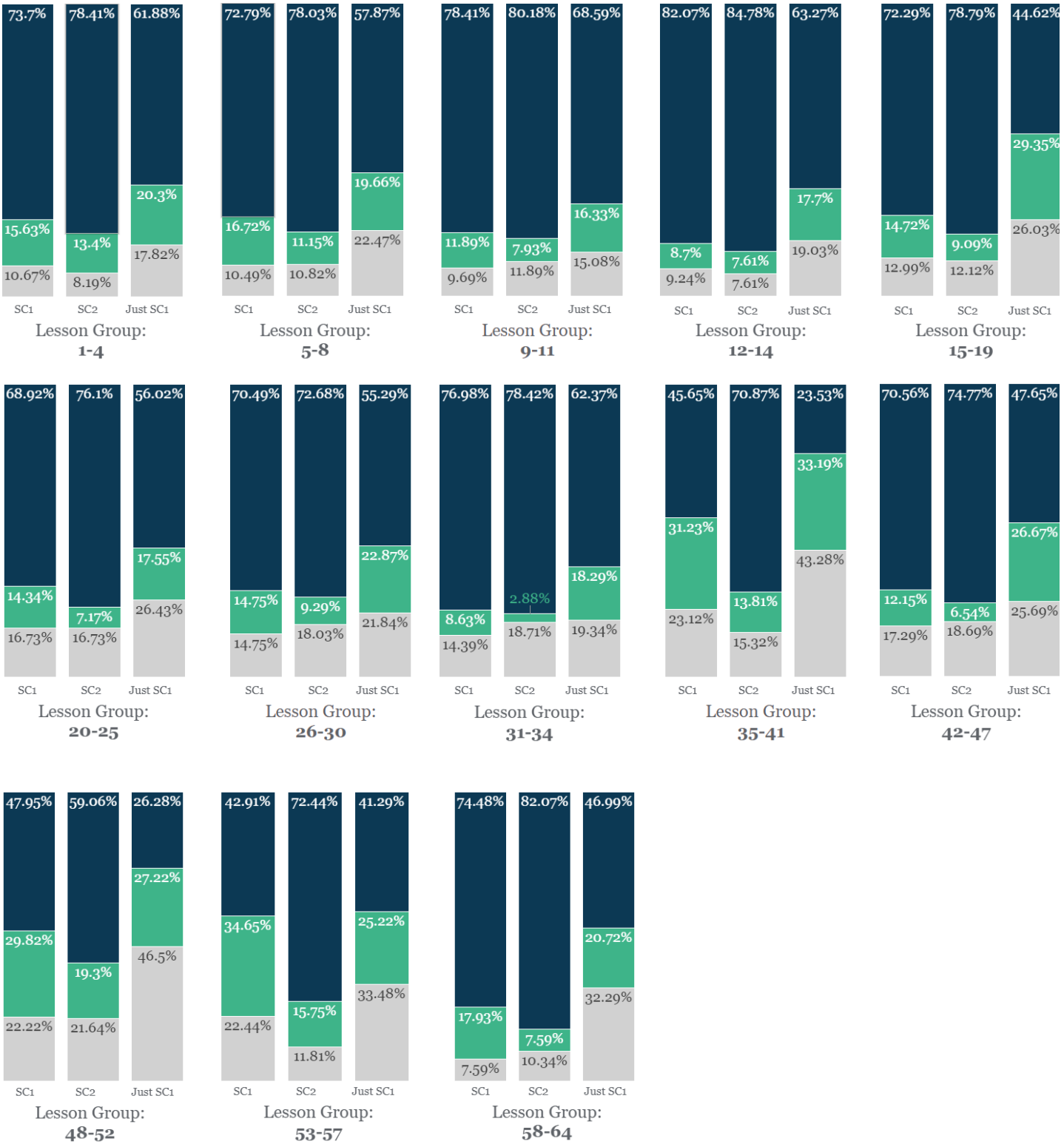


Figure 10: Changes in Kindergarten Skill Check Scores by Teacher Usage