

Issue BRIEF

FINDINGS IN BRIEF

- Students experienced different levels of Leveled Literacy Intervention (LLI) duration and intensity, and most fell short of the recommended minimum number of sessions.
- Schools faced numerous challenges implementing LLI, including (1) delayed start dates and varying end dates, (2) tradeoffs between pullout groups and scheduled classes, (3) skipped and modified lesson components, (4) limited teacher training, and (5) students' attendance and engagement at the high school level.
- LLI had no impact on students' reading comprehension and a negative impact on mastery of English language arts/literacy standards.
- Students who received more LLI or were pulled out of other classes to receive LLI were particularly negatively affected, possibly as a result of missing grade-level content.

Naihobe Gonzalez, Sophie MacIntyre, and Pilar Beccar-Varela (Mills Teacher Scholars)

Leveled Literacy Intervention for Secondary Students: Results from a Randomized Controlled Trial in Oakland Schools

Too many youth leave high school without the literacy skills that colleges and employers demand. In the Oakland Unified School District (OUSD), about half of secondary students read multiple years below their grade level. Despite many promising programs designed to increase literacy among younger students, schools struggle with finding effective ways for accelerating older, struggling readers. In search of a solution, OUSD began piloting Leveled Literacy Intervention (LLI), an intensive reading program, in secondary schools in 2015. Many school districts across the country have used LLI, which has shown promise in improving outcomes for students in early elementary grades. This research brief summarizes findings on the implementation and impacts of LLI in Oakland, where the district conducted the nation's first randomized controlled trial of LLI in secondary grades.

BACKGROUND


According to the Program for the International Assessment of Adult Competencies, 14 percent of American youth and young adults possess limited literacy skills. In OUSD, 52 percent of secondary students scored multiple years below their expected reading level on the Scholastic Reading Inventory in fall 2016, with almost one-third reading four or more years below grade level. Because literacy is associated with greater job opportunities and higher incomes, the stakes are high for finding effective ways to accelerate these students. In response, OUSD invested in piloting LLI in secondary schools and partnered with researchers at Mathematica to study the program's effectiveness with struggling readers in grades 6 to 9.

THE INTERVENTION

LLI is a short-term, intensive intervention system designed to help teachers provide daily, small-group instruction to students who are not achieving grade-level expectations in reading. It is intended to supplement, rather than replace, regular literacy instruction. Although it was originally developed for students in early elementary grades, it has since expanded across K–12. Materials include a series of leveled texts and lesson guides of progressing difficulty that match to students' reading level. Lessons focus on increasing reading volume, deepening and expanding comprehension, and promoting language development.

Teachers begin by assessing students using a one-on-one assessment that matches students' instructional and independent reading abilities to the text-level gradient used by LLI. Teachers then form small groups of three to five students with similar assessment scores and deliver 30- to 45-minute daily lessons. The recommended

32%
of secondary students
in OUSD read 4 or more
years below grade level



ABOUT THE STUDY

OUSD recruited 10 secondary schools into the study in August 2016.



Teachers formed twice as many LLI groups as they could serve.



For each school, Mathematica researchers used a lottery to randomly assign half the groups (145 students) to receive LLI and the other half (147 students) to the control group.



Teachers began LLI instruction in October 2016 to February 2017.



OUSD collected attendance, implementation, and fidelity data during the school year.



Students took the Scholastic Reading Inventory and Smarter Balanced Assessment in April to June 2017.



Mathematica researchers analyzed the data, using regression analysis to estimate the impacts of LLI.

program length ranges from 12 weeks to 24 or more weeks and depends on students' starting reading level. For the starting reading levels of most students in this study (corresponding to grades 3 to 5), LLI recommends that students participate for 18 to 24 weeks.

Past studies indicate that LLI is effective at improving the reading skills of younger students. In randomized controlled trials in diverse settings with students in kindergarten through grade 2, LLI produced significant gains in reading after 12 to 18 weeks (Ransford-Kaldon et al. 2010; Ransford-Kaldon et al. 2013). A review of this research by the What Works Clearinghouse (2017) determined that LLI had positive effects on general reading achievement and potentially positive effects on reading fluency for beginning readers. In Oakland, elementary schools have offered LLI to students in early grades since 2012 and have reported promising results.

FINDINGS

Students experienced different levels of LLI duration and intensity, and most fell short of the recommended minimum number of sessions.

The average student assigned to LLI participated in the program for 16 weeks, although the duration varied significantly across students. School-level factors, such as the program start and end date, and individual student factors, such as the decision to stop participating in LLI, affected how long students were enrolled in the program. In addition, very few students received the recommended intensity of 4 or 5 days per week, as student attendance was inconsistent—on average, students assigned to LLI attended 2.1 out of 3.8 sessions offered per week—and only 2 of the 10 study schools offered

daily sessions. As a result, 63 percent of students assigned to LLI received fewer than the total recommended minimum number of sessions.

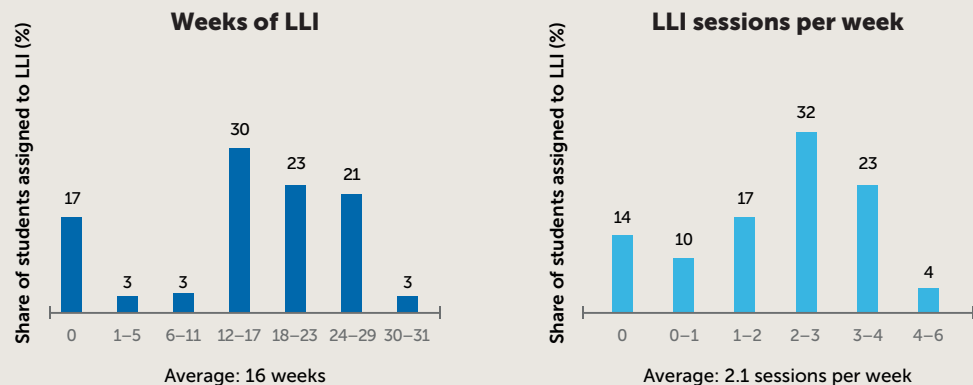
High schools particularly struggled with student participation and engagement.

High school students assigned to LLI were 3.6 times less likely than students in grades 6 to 8 to actually receive LLI. In most cases, this disparity was because high school students (or their families) declined to participate in the program. High schoolers also attended significantly fewer sessions than students in middle grades. Teachers at each of the three high schools in the study reported challenges with student attendance or engagement, particularly with groups pulled out of other classes. For example, one teacher reported that students resented leaving a creative writing class they liked for LLI. Another teacher had to terminate the program in early February because of chronically low student attendance despite initial plans to offer LLI through the end of the school year.

Program start and end dates varied widely across schools.

Although most schools planned to start offering LLI in the fall, actual start dates ranged from October to February. Schools reported that securing the right LLI materials, receiving teacher training, and completing the initial one-on-one student assessments sometimes took longer than anticipated. End dates also varied from February to June. In some schools, the duration was fixed (for example, all of second semester), while in other schools, LLI was offered through the end of the school year and the duration depended on individual student progress, though exit criteria varied or were not always specified. On average, students began the program in early December and ended in mid-April.

Program duration and intensity for students assigned to LLI



Source: Mathematica calculations based on student data provided by OUSD.



LLI Lesson Components

- Discussion of yesterday's new book
- Revisiting yesterday's new book
- Phonics/word study
- Reading a new book
- Writing about reading
- Reading and assessment

Scheduling LLI classes proved difficult for some schools, but pulling students out of other classes presented other challenges.

Of the 10 study schools, 5 offered LLI in a scheduled class, 4 pulled students out of other classes, and 1 used both models. Some schools noted that it was difficult to create a regularly scheduled LLI class because LLI serves a small number of students and their participation is not determined until after the start of the school year. Although offering LLI in pullout groups was logistically easier, students had to miss other classes and make up the work, which concerned some students, parents, and classroom teachers. Some LLI teachers tried to minimize this burden by holding sessions at a different time each day, but students in pullout groups were more likely to refuse LLI and attend fewer sessions than those in regularly scheduled classes, particularly at the high school level.

Instructional fidelity was relatively low, primarily because of skipped or modified lesson components.

A typical LLI lesson is fast-paced and has multiple components, with most being 5 to 10 minutes long. Many teachers struggled to complete all of the components in a day's lesson within the time allotted and either skipped or completed some in the following session. The most commonly skipped components were phonics/word study and reading and assessment. Although teachers sometimes skipped phonics for timing reasons, some felt the content was not appropriate for the needs of their older students. The assessment component presented different challenges. In addition to time constraints, some teachers reported struggling to keep the rest of the group on task during one-on-one assessments. Conducting these assessments also required experience or

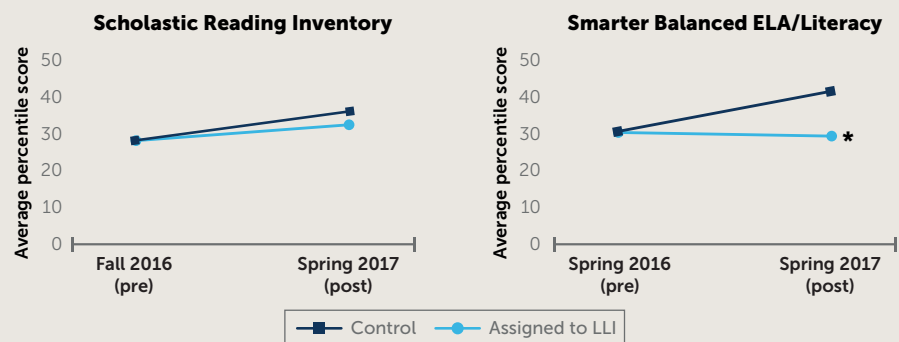
training, familiarity with LLI's online resources, and time to download and print the forms in advance. These requirements potentially presented barriers to teachers new to LLI and even to experienced teachers with limited planning time. Finally, it was common for teachers to modify the lesson guides in other ways, such as reorganizing the components or deviating from the suggested language.

Although most teachers were new to LLI, not all of them received sufficient training in the program.

Of the 20 teachers in the study, 14 received training, typically in a two-day session led by an LLI representative, a half-day training led by OUSD central staff, or both. Only 1 of the 6 teachers who did not receive training had previous experience with LLI (overall, 20 percent of teachers had previous experience with the program). The fidelity data suggest that these training opportunities might not have sufficiently prepared all teachers to conduct LLI as designed. During classroom observations, some teachers were found to need reminders about lesson timing, suggested modifications for shorter sessions, how to find and use the online resources to prepare lessons in advance, how to regularly assess students, and at times, how to conduct the lesson components as written.

LLI had no impact on students' reading comprehension and a negative impact on their mastery of English language arts (ELA)/literacy standards. At the end of the school year, students in all grades took the Scholastic Reading Inventory, which assesses reading comprehension, and students in grades 6 to 8 took the Smarter Balanced Assessment, which tests mastery of grade-level standards in ELA/literacy.

Student test scores before and after being assigned to LLI



* The effect is statistically significant at the 5 percent level.

Source: Mathematica calculations based on student data provided by OUSD.

Notes: Percentile scores range from 1 to 100 and are relative to all secondary students in OUSD. Control group averages were adjusted using ordinary least square regressions that account for small, random differences in pre-test scores and demographic characteristics between students assigned to LLI and students in the control group.

The negative impact of being assigned to LLI on ELA/literacy scores is roughly equivalent to losing 5.5 months of learning.

Compared with the control group, LLI students' Scholastic Reading Inventory scores grew about the same between the fall and spring on average. And although students in the control group on average improved their Smarter Balanced ELA/literacy scores from the previous year, LLI students performed slightly worse. Based on the typical annual growth in reading of students in these grades, the negative impact of being assigned to LLI on ELA/literacy scores is roughly equivalent to losing 5.5 months of learning.

Students who received more LLI or were in pullout groups were particularly negatively affected, possibly as a result of missing grade-level content. Many students assigned to LLI received fewer than the minimum recommended number of sessions, which could affect the program's effectiveness. However, receiving at least 48 sessions also had no impact on reading comprehension and had an even larger, negative impact on ELA/literacy scores (equivalent to losing about 10 months of learning). In addition, the impact of LLI on student performance on both assessments was worse for students taught in pullout groups. As very few students in the control group received additional literacy supports beyond regular classroom instruction, these findings suggest that students in LLI might have been hurt by missing grade-level content.

LOOKING AHEAD

One reason OUSD elected to implement LLI in secondary schools is that—consistent with the experience of many of its elementary schools—past studies suggest the program is effective with students in early grades. However, aside from focusing on a very different grade span, these studies featured other key distinctions: students received the recommended number of sessions, fidelity ratings were high, and all teachers received eight days of professional development. Because of the relatively inconsistent implementation of the program in OUSD secondary schools, it is difficult to pinpoint why LLI was not effective in this context. It is possible that after one or two more years, secondary schools and teachers would gain enough experience to overcome the early challenges they faced and implement the program to fidelity, leading to better results.

However, secondary schools and students might also have unique needs that are not well suited to LLI. For example, although there appear to be bigger downsides to pulling secondary students out of grade-level instruction to receive LLI, scheduling a regular LLI class can present logistical challenges for middle and high schools. In addition, because of students' low starting reading levels, most schools used LLI materials designed for students in elementary grades—which might help explain why teachers skipped some lesson components and why high school students were less engaged. This study's findings highlight the importance of assessing whether the success of instructional programs in one context can be replicated with different populations and conditions.

**For more information, please contact
Naihobe Gonzalez at ngonzalez@mathematica-mpr.com**

REFERENCES

Ransford-Kaldon, Carolyn, E. Sutton Flynt, Cristin Ross, Louis Franceschini, Todd Zoblotsky, Ying Huang, and Brenda Gallagher. "Implementation of Effective Intervention: An Empirical Study to Evaluate the Efficacy of Fountas & Pinnell's Leveled Literacy Intervention System (LLI)." Memphis, TN: Center for Research in Education Policy, September 2010.

Ransford-Kaldon, Carolyn, Cristin Ross, Christine Lee, E. Sutton Flynt, Louis Franceschini, and Todd Zoblotsky. "Efficacy of the Leveled Literacy Intervention System for K–2 Urban Students: An Empirical Evaluation of LLI in Denver Public Schools." Memphis, TN: Center for Research in Education Policy, November 2013.

What Works Clearinghouse. "Leveled Literacy Intervention Intervention Report." Washington, DC: U.S. Department of Education, Institute of Education Sciences, September 2017.

The research reported here was supported by the Institute of Education Sciences, U.S. Department of Education, through Grant R305L160003 to the Oakland Unified School District. The opinions expressed are those of the authors and do not represent views of the Institute or the U.S. Department of Education.

Follow us on:



Mathematica® is a registered trademark of Mathematica Policy Research, Inc.



Scan this QR code to visit our website.