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Improving Vulnerable Populations' Emergent Reading Outcomes by Training Preservice Teachers in an Evidence-Based Program

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ABSTRACT

This article details a large-scale tutor-to-teacher pipeline created in the midst of the COVID-19 pandemic. The program addressed two vital needs: 1) improving outcomes for striving readers in high-needs communities, and 2) improving teacher training in both evidence- and research-based instruction. Across school year (SY) 2020–2021 and 2021–2022, 608 preservice teachers delivered an evidence-based (Reading Rescue) or research-based (Reading Ready) early literacy intervention. Through a coordinated effort between the City University of New York (CUNY) and the NYC Department of Education (NYC DOE), 857 NYC DOE students received one-on-one, interactive, remote tutoring three to five days a week, for an average of 21 sessions. Results demonstrated that students who received the emergent word reading program, Reading Ready, improved in their phoneme segmentation and non-word reading skills by 31–47%, and students who received the follow-up evidence-based program, Reading Rescue, consistently improved by one intervention reading level per 10 sessions, and showed age equivalent reading gains of one-half to almost a full year of growth as measured by a standardized, nationally normed assessment. Discussion focuses on the value of this high-quality training and tutoring experience for preservice teachers and on the critical support provided to striving readers in underserved communities in the midst of the COVID-19 pandemic.

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Students in the United States are months behind in reading and math as a result of the COVID-19 pandemic. An official White House briefing stated that high-dosage one-on-one or small-group tutoring tutoring offered several times per week (Fryer & Howard-Noveck, 2017)—would be prioritized as a way to deal with this COVID-19 pandemic-related learning loss. Through the newly created National Partnership for Student Success, the White House is encouraging schools to use the \$122 billion in American Rescue Plan funds for programs that are proven to be effective in boosting student success: high-quality tutoring, summer learning and enrichment, and after-school initiatives (The White House, 2022a, 2022b). This effort is driven by three key factors: the critical importance of early reading interventions (see Solari et al., 2021 for a review), extensive learning loss due to the pandemic (Kuhfeld & Lewis, 2022), and research on tutoring as a means to catch students up (Robinson et al., 2021).

While this national call to action responds to a critical need in the face of rampant pandemic-related learning loss, the need for support existed before the pandemic. The National Assessment of Educational Progress: Reading Results (2022) report on 4th-graders revealed that only 33% of students nationwide were reading at or above proficient level, meaning that 66% of students were reading at a basic or below basic level. The findings among Black and Hispanic children, English language

learners, and those who receive free or reduced-price lunch were even more troubling. Only 17% and 21% of Black and Hispanic students, respectively; only 19% of students who received free or reduced-price lunch; and only 10% of English language learners were reading at or above a proficient level (National Assessment of Educational Progress, 2022). It is also worth noting that urban students scored 10% lower in proficiency than suburban students, 31% vs 41% (National Assessment of Educational Progress, 2022). This lack of reading competency constitutes an educational crisis—one that existed before a single pandemic-related school building closure had occurred in the United States. We have failed American children, and those from institutionally underserved populations have suffered the most from this dereliction of duty.

In the first months of the COVID-19 pandemic, approximately 91.3% of children enrolled in formal education worldwide were affected by stay-at-home orders (Bao et al., 2020). It was predicted that the switch from in-person instruction to remote learning would exacerbate existing educational inequalities. For example, it was expected that more vulnerable students, specifically those from lower socioeconomic backgrounds, would fall further behind during this emergency period. Factors expected to contribute to pandemic-related learning loss among students from less-advantaged families included lack of: relevant digital resources, suitable home learning environments, readily available parental support, and ability to secure private online instruction (DiPietro et al., 2020). A study of students in the Netherlands, a country with “best-case” educational conditions and a relatively brief lockdown, found that pandemic-related learning loss was 60% greater for children in homes with lower levels of education (Engzell et al., 2021). In December 2020 (10 months into the pandemic), Dorn et al. (2020) speculated that by the end of June 2021, students of color might have experienced 6–12 months of learning loss in mathematics, with white students losing only 4–8 months. Another group of researchers used longitudinal data to predict that kindergarten children would see 67% less literacy growth during remote learning, in contrast to in-person learning (Bao et al., 2020).

The actual learning loss, reviewed below, is as troubling as experts predicted (Kuhfeld & Lewis, 2022). Compounding this issue is the ongoing problem that schools of education do not adequately train preservice teachers with the skills to teach the essential components of literacy, nor the linguistic skills necessary for emergent word reading (Ross, 2018). Furthermore, preservice teachers need to be given high-quality clinical experiences to help them hone their skills in teaching a child to read.

Tutoring has been found to be one of the viable ways to tackle pandemic-related learning loss (Robinson et al., 2021). Robinson et al. (2021) explain that specific characteristics of tutoring programs are needed to make them impactful. Tutoring that is high dosage or multiple times a week, that uses high-quality curriculum, and that monitors data (including informal data) to inform instruction is most impactful. Also, Robinson et al. (2021) emphasize that relationships built by having a consistent tutor also may positively impact academic outcomes. Moreover, when intensive instruction through tutoring intervention is targeted toward students of low SES, it may help to reduce educational inequities (Dietrichson et al., 2017).

This article will elucidate how a tutoring program put forth by a public university—and carried out by preservice teachers in the midst of the COVID-19 pandemic—improved student outcomes and provided a much-needed fieldwork experience for future educators, who must be prepared to tackle the ongoing crisis of learning loss. This article will describe the project in detail: its inception, how it was implemented, who participated, what the ultimate results were for students, and how those outcomes aligned with the original mission set forth by the project overseers.

Literature review

Actual learning loss findings

As was predicted, pandemic-related school closures resulted in disruptions to learning (a 5–10 percentile point decline in math and a 2–4 percentile point decline in reading) and perpetuated existing inequities that already impacted Black, Hispanic, and American Indian/Alaska Native

students (Kuhfeld & Lewis, 2022). In a White House briefing on student learning, Ambassador Susan Rice reported that in the wake of schooling disruptions caused by the COVID-19 pandemic, students were 2–4 months behind on average in reading and math, with even greater gaps for low-income students and students of color (The White House, 2022b). Black and Hispanic students were more likely to be learning remotely (Goldhaber et al., 2022) and, simultaneously, were more likely to encounter challenges in the “new normal” of remote learning. Due to the ongoing effects of systemic poverty, Black and Hispanic households are less likely than white households to have reliable access to the internet or to devices that connect consistently to the specific programs needed for remote learning. Also, many parents in these communities opted not to send their children to kindergarten at all, which may have had a significant effect on a child’s academic performance (Dorn et al., 2020). D’Souza (2021) discusses concerns from early childhood teachers and advocates about children who may not attend kindergarten and thus may struggle immensely when entering 1st grade. This is especially concerning for low-income students who often do not have equal access to support outside of school, such as private tutoring and high parental engagement. Bao et al. (2020) expounded on previous studies, which have shown that efforts such as intensive summer instruction and frequent library visits can help to mitigate typical literacy loss; however, these options were largely unavailable during pandemic-related closures, especially for children living in low-SES households.

To address the immense academic learning loss from the pandemic, it is imperative that educators account for the differences between low-achieving and high-achieving students and promote more equitable access to online learning (Bacher-Hicks et al., 2021). When implementing interventions to tackle learning loss, educators and administrators should specifically prioritize children of essential workers, low-SES families affected by the “digital literacy divide” mentioned above, and any other vulnerable populations unique to their school community.

For Black and Brown students, and students from underserved communities, high-quality, evidence-based early literacy instruction is vital. The fact that these communities have suffered the most learning loss is devastating, though not surprising given the lack of adequate support and resources owed (but not provided) to these learners. However, there are promising examples of programs, the current program among them, that are already working to mitigate this loss. This article shows how high-quality one-on-one systematic instruction from preservice teachers trained in proven literacy methods can provide students with a safe, supportive learning environment to hone these essential skills.

Teacher education and teacher linguistic skills

In order to make up for early literacy loss, systematic and explicit instruction in phonemic awareness and phonics is crucial to laying a healthy literacy foundation for students and setting them on a path to success in their ability to read words (Birsh & Carreker, 2018; Brady et al., 2011; Ehri et al., 2001; Galuschka et al., 2014; Kilpatrick, 2015; McArthur et al., 2012; The International Dyslexia Association, 2018; Torgesen, 2004). According to the National Early Literacy Panel (Eunice Kennedy Shriver National Institute of Child Health and Human Development, NIH, DHHS, 2010) and the National Reading Panel (National Institute of Child Health & Human Development [NID, DHHD], 2000), students also should receive ample practice in building fluency, vocabulary instruction, and reading comprehension in order to reach grade level expectations in 1st and 2nd grade and beyond. Therefore, as Crim et al. (2008) states, it is imperative that preservice and inservice teachers receive adequate training in the essential components of literacy and that have sufficient practice implementing structured literacy lessons.

In the midst of the COVID-19 pandemic, schools where teachers would otherwise be able to do fieldwork were closed. There were so few options for high-quality fieldwork experiences that preservice teachers were at risk of graduating without being fully equipped to effectively teach a child to read. This was deeply troubling, and exacerbated by the recent findings of the National Council of Teacher Education (NCTQ), which ranked New York 45th out of 49 states surveyed in addressing the

five essential components of literacy in teacher education coursework (Drake & Wash, 2020). Recently, NCTQ found that only 53% of teacher preparation programs were adequately incorporating the essential components of literacy instruction: phonemic awareness, phonics, fluency, vocabulary, and comprehension (National Council on Teacher Quality, 2020).

Teachers need linguistic knowledge of their own to be able to teach literacy effectively and to plan appropriate instruction (Carreker et al., 2010; Cash et al., 2015; McCutchen et al., 2002; Moats, 2009; Moats & Foorman, 2003; Piasta et al., 2009), and students require phonetic, multisensory intervention to build necessary reading skills. As stated, teachers often lack knowledge of such specialized instruction (Schraeder et al., 2021). Preservice and in-service teachers tend to demonstrate low levels of linguistic knowledge (Cohen et al., 2017; Crim et al., 2008; Moats & Foorman, 2003; Puliatte & Ehri, 2018; Washburn et al., 2011), yet teachers' linguistic knowledge is directly correlated to student reading and spelling, as well as end-of-year reading achievement (Cash et al., 2015; McCutchen et al., 2002; Moats, 2009; Puliatte & Ehri, 2018).

To combat this lack of teacher knowledge, research supports the effectiveness of training and preparation programs in increasing elementary teachers' knowledge regarding foundational constructs. Kennedy et al. (2013) demonstrated that pre- and in-service teachers have limited understanding of the components of teaching reading; however, improvement can be made following professional development or coursework.

Tutoring

Evidence-based interventions have been the topic of many studies as a method of supporting struggling readers (Lane et al., 2009; Nickow et al., 2020; Slavin, 2020; Wang & Algozzine, 2008). One-to-one high-dosage tutoring allows students the time and space to learn important literacy skills they may not have access to in their classrooms. High-dosage intervention can substantially improve educational achievement for young students (Allor & McCathren, 2004; Lindo et al., 2018; Robinson et al., 2021; Vernon-Feagans et al., 2013). Furthermore, O'Connor et al. (2010) found that earlier intervention led to significantly better outcomes than the same interventions begun later in kindergarten.

The need for in-person tutors following the ongoing recovery from the pandemic is massive. President Biden initiated an American Rescue Plan (ARP) to provide funds in order to provide high-quality tutoring and combat learning loss (The White House, 2022a). While research has consistently shown that high-quality tutoring programs can produce about five months of additional learning (Nickow et al., 2020), the results of the ARP might not be seen for years to come. Additionally, students performed better when tutoring was offered during the school day instead of before or after school, and when tutors were paid educators, paraprofessionals, university students, or paid volunteers (exchanging paid work time to tutor) (Robinson et al., 2021). Based on the learning loss reviewed above, the demand for tutors trained in effective, evidenced-based programs is urgent.

Prior research on Reading Rescue & Reading Ready

Reading Rescue is an evidence-based, high-dosage, emergent reading intervention for 1st- and 2nd-grade striving readers (see description of program in Methods). The evidence base for the program demonstrates strong effect sizes with racially and linguistically diverse students from typically underserved schools in New York City (Ehri et al., 2007; K. Miles et al., 2018; K. P. Miles et al., 2022; Muller, 2004).

Prior to the COVID-19 pandemic, only school staff were trained to be Reading Rescue tutors by attending 24 hours of professional development in-person training over the course of five days. The urgency of pandemic-related learning loss was the catalyst for streamlining the training into a 12-hour, virtual, synchronous training and opening up the training to preservice teachers at a local public university.

Reading Ready was developed as the precursor program for Reading Rescue in light of the immense need for a basic word reading program due to many students not receiving this type of instruction

when schools closed during the pandemic. Like Reading Ready, Reading Rescue is a research-based, high-dosage, emergent word reading program (see description of the program in Methods). It was written as preventive word reading instruction for kindergartners and as intervention for 1st-graders. The program can be used as a one-to-one intervention, in a small-group format, or even as whole-class instruction. In this instance, it was used one-to-one as an intervention.

The purpose of this article is to advance the awareness, understanding, and use of an evidence-based intervention, Reading Rescue, and a new research-based program, Reading Ready, for high-needs diverse populations, as implemented by preservice teachers during the COVID-19 pandemic.

Rationale and hypotheses

It was hypothesized that by leveraging preservice teachers' coursework, and integrating a research-based tutoring program into teacher-preparation programs, these programs would yield emergent literacy skill gains for students.

The purpose of this project was two-fold: to improve foundational literacy skills for 1st- and 2nd-grade striving readers at low ELA proficiency and high economic needs schools, and to ensure university preservice teachers are trained in and have practice using evidence-based programs.

This new effort—the alliance between the Early Childhood Education program at CUNY, the Reading Rescue/Reading Ready programs, and the NYC DOE—was, in its inception, a COVID-19 pandemic response program designed and developed to reach some of the most vulnerable students in NYC when school buildings were closed. Therefore, there was no opportunity to randomly assign students to conditions, as the goal was simply to reach as many students as possible by leveraging university students as tutors and by piloting the use of a new, easy-to-implement program.

Methods

Reading Rescue

Reading Rescue is an evidence-based, one-to-one or small-group, high-dosage intervention for 1st- and 2nd-grade striving readers (Ehri et al., 2007; K. Miles et al., 2018; Muller, 2004). The program has historically been provided to urban students in underserved communities. Students receive a 30- to 40-minute tutoring session three to five days a week with a trained tutor. Each session moves through five specific parts of a lesson plan: fluency building, informal assessment, phonics work, writing using new phonics skills, and introducing a new book.

Reading Rescue rests on the pillars of the five essential components of literacy: phonemic awareness, phonics, fluency, vocabulary, and comprehension. These components are woven throughout the lesson and taught in a systematic and explicit way. For example, in a phonics lesson, tutors begin by explicitly teaching a new phonetic concept using magnetic letters. This is followed by four phonics activities that provide further opportunity to teach the skill in an explicit manner.

The systematic nature of the program relies on a substantial phonetic elements scope and sequence and a set of books that increase in orthographic and syntactic complexity. Through rigorous documentation of student skills and gaps, tutors tailor their instruction. They use data collected in each lesson to determine how to prompt for student-led decoding, which phonics activities to do next, which words to select for sentence-reading, and what text should be selected next. Additionally, comprehension is taught during the lesson through the use of book conversations, three types of questioning, and think alouds.

Reading Ready

This program consists of 10 lesson sets (or units) with activities that last three to six sessions per lesson set, resulting in 30–60 sessions. The content squarely focuses on propelling students into word

reading, thus it explicitly and systematically addresses: letter-sound knowledge, phonemic awareness, phonics and blending, and decodable sentence reading. The program has an extensive phonemic awareness progression of skills that starts with phoneme isolation and addresses phoneme blending, segmenting, adding, deleting, and substituting. There is also a specific scope and sequence of phonetic elements that progresses from one-to-one letter-sound knowledge to double letters, blends, digraphs, silent e, and r-controlled vowels.

There are four parts of each session: letter practice, sound practice, word practice, and sentence reading practice. The phonetic elements addressed in letter practice are combined with previously taught phonetic elements to create the target items for all the words students are using throughout the lesson in order to build mastery and confidence.

In light of the success of this alliance experienced during the 2020–2021 school year, the staff members at CUNY and NYC DOE decided to offer Reading Rescue as well as Reading Ready intervention to support NYC DOE students during the 2021 summer months. This support was offered to striving 1st- and 2nd-grade students (rising 2nd- and 3rd-graders) as a part of the NYC DOE's first Summer Rising program, an inaugural effort to combine academics and a camp-like environment to students whose learning had been interrupted by the pandemic.

Universal Literacy Reading Coaches, NYC DOE teachers who specialized in K-2 literacy, at city-wide Summer Rising sites were excited to be included in the pilot use of Reading Ready due to their experience using Reading Rescue, as part of their training and practicum, and the outcomes it yielded. The inclusion of the Reading Ready program was a valuable one, given the need for a systematic, explicit, easy-to-implement program specifically designed for students not yet reading connected text.

Transforming preservice teacher training to respond

The CUNY Reading Rescue program was launched in the fall of 2020 by the lead author in partnership with the NYC DOE via the second author. The first author saw the need for preservice teachers to have a high-quality field experience during the COVID-19 pandemic, and the need for support of NYC DOE striving readers in vulnerable communities was immense due to increased learning loss and staffing shortages. Therefore, in the first year of the program, the author trained all of the students in the undergraduate and graduate courses that she taught/oversaw in an evidence-based, high-dosage intervention program, Reading Rescue (Ehri et al., 2007; K. Miles et al., 2018; K. P. Miles et al., 2022; Muller, 2004). This program expanded into the aforementioned summer learning program in which the new precursor program, Reading Ready, was used in addition to Reading Rescue as part of the NYC Summer Rising program (the results from the summer program are not included in this paper). From there, the program expanded during the 2021–2022 academic year to include both Reading Ready and Reading Rescue. All training and tutoring was done remotely. This article focuses on the results of the school year implementation of the 2020–2021 and 2021–2022 cohorts.

General demographic data

Preservice teachers

The preservice teachers who participated in this tutoring initiative were enrolled in an early childhood literacy course at the university. While demographic data were not collected on the individual participants, program level data collected from spring 2020-fall 2021 shows that across those semesters, 87–88% of undergraduate students and 71–76% of graduates were economically disadvantaged and 79% of undergraduates and 67% of graduates identified as nonwhite. Additionally, this race metric does not capture students who identify as white but ethnically identify as Russian, Ukrainian, and Polish, of which the department has a substantial population.

NYC DOE students

For the 2020–2021 school year, the average Economic Need Index for New York City was 0.71, meaning that an estimated 71% of students attending NYC DOE schools were dealing with issues of poverty (Student Economic Need Index) (Citizens' Committee for Children of New York, 2021). Just over 147,000 English language learners (ELLs) were enrolled in NYC DOE schools (about 13% of the student population) (Alfred, 2021). More than half of these students were enrolled in elementary school and about 28% were in kindergarten through 2nd grade. The home language of most ELLs in NYC DOE schools is Spanish, followed by Chinese, Arabic, Bengali, Russian, Urdu, Haitian Creole, Uzbek, French, and Tadjik (NYC Department of Education Division of Multicultural Learners, 2021).

Due to the effects of the pandemic, 2019–2020 and 2020–2021 literacy outcomes for NYC students are not available or not generalizable. For the 2018–2019 school year, the average English language arts (ELA) or literacy proficiency rate for 3rd- through 8th-grade students was 47.4%, as determined by performance on that year's state ELA test (New York City Department of Education [NYCDOE], 2022). The 3rd grade proficiency for the 2018–2019 school year was 53.3% (NYCDOE, 2022).

School year 2020–2021

Participants

A fall 2020 cohort of 97 and a spring 2021 cohort of 85 preservice teachers from CUNY's Brooklyn College participated in the program. The course these preservice teachers were enrolled in focused on the development and teaching of literacy from pre-K to 2nd grade. The courses met once a week for three hours and required 30 hours of fieldwork, to be completed over the course of the semester. Typically, pre-pandemic, students in these particular courses were able to complete their fieldwork hours in person, in schools all over the city. But in the fall of 2020, when school buildings were closed, the professor (and first author of this article) needed a high-quality fieldwork option for her university students to fulfill these hours.

Recognizing that many DOE students in the surrounding NYC area were in desperate need of literacy tutoring, the professor arranged Reading Rescue training for all of her students in both the undergraduate and graduate early literacy courses. She offered them each the opportunity to remotely tutor a striving 1st- or 2nd-grader in an underserved community, three to five times a week (high dosage) in order to fulfill their fieldwork requirement, at which point grant money was offered to motivate tutors to continue to provide these tutoring sessions to their students.

Sixty-four Brooklyn College students opted to tutor to fulfill their fieldwork requirement (an alternative assignment was offered to others). Through this opt-in, 60 NYC DOE 1st- and 2nd-grade striving readers received five or more tutoring sessions. It was a complex task to align the availability of university tutors and their DOE students, and this was only compounded by the intensity of illness during this pre-vaccine time. As a result, four of these tutors did not have successful pairings, mostly due to student attendance issues. More information on recruiting the participating schools and students is below.

Training

University students were mailed a full kit of physical Reading Rescue materials and directed to online resources where digital Reading Rescue materials intended for remote instruction were located. The physical materials include a curriculum resources binder, consumable student pack, writing book, strategy list cards, agenda cards, toolkit with phonics elements chart, laminated phonics practice mat, chips to use on the mat, set of magnetic letters, white board, dry erase markers and erasers, timer, and pencils. The remote materials include digital copies of all print materials as well as frames for interactive digital instruction via Google Jamboard. Jamboard's interactive frames allowed tutors to remotely lead activities typically conducted with physical tools such as magnetic letters, the phonics practice mat and chips, and word sort cards.

The preservice teachers were required to attend four remote sessions (one each week for four weeks) that lasted three hours each for a total of 12 hours of training. The training was conducted synchronously via Zoom. This training focused on ensuring tutors understood how to effectively implement all five parts of the lesson plan, use data to inform instruction, and engage with the remote materials.

Each preservice teacher received two to three formal observations over the course of tutoring one student for 20 sessions. Preservice teachers who tutored as part of their coursework only worked with one student, so their observations were conducted only on that tutor-student pair. Hired tutors worked with two or more students, so all of their observations were conducted on one of their tutor-student pairings for the sake of consistency. In order to conduct observations, Reading Rescue supervisors watched the tutor carry out a recorded session with their assigned student. All tutors received a pre-observation by a lead tutor—a paid staff member who was previously an outstanding tutor—between their first and fifth tutoring session. A fidelity checklist was used, and feedback was shared with tutors. If the lead tutor determined a tutor needed substantial support, a coaching session with the lead tutor was scheduled. These sessions often included modeling by the lead tutor, and an optional follow-up observation was provided to ensure improvements in tutoring were made. All tutors received a post observation between their 15-20th session working with their first student. Feedback on all observations were shared with the tutors.

School recruitment

Schools were recruited using a variety of factors, including student reading proficiency, economic need, school capacity, interest, and preexisting relationships between DOE central, school superintendents, and school principals. As for students' reading proficiency, the priority of recruitment was to find schools in which 3rd-graders were not yet reading on grade level, as determined by spring 2019 New York State English Language Arts test results (students scoring a level one or two as opposed to a three or four). The 3rd-grade data were used as a proxy for the general performance level of a school's 1st- and 2nd-graders, given that no state or citywide assessment was available for those grade levels that would have provided more specific information. These schools also had high economic needs and high populations of students of color (New York City Department of Education, n.d.).

In terms of capacity, the schools recruited to participate needed to have leaders and administrators who would ensure that there would be systems and structures in place that enabled successful tutoring sessions to occur. These included: a point of contact for the CUNY team, the ability to gather the necessary data, technology for students to use, enough physical space for students to engage meaningfully with their tutoring work, and a strong communicative relationship between school administrators and the CUNY team of organizers. It was also necessary for a school's leadership team to be interested in providing a high-impact intervention program for students in the first place. Due to the complexity of scheduling, schools needed to be active and willing partners in order for tutoring to be successful. Finally, the NYC DOE central team used their strong relationships with district superintendents and school principals to recruit partner schools to participate in the program.

Rostering

Once schools were selected based on the criteria described above, the point of contact for the school—frequently a ULit reading coach, school-based literacy coach, or a classroom teacher—was asked to provide a variety of information that would allow the CUNY team to pair school students with CUNY pre-service teacher tutors. This information consisted of student identifiers, current independent reading level, confirmation of family consent for both virtual tutoring and the recording of sessions, and windows of availability for when tutoring could take place as tutoring could occur either during the school day (at school or home for those students participating in remote learning) or after school

(again, either at school or home). Data were collected via Excel spreadsheets and stored in a secure NYC DOE SharePoint site in accordance with city, state, and federal regulations.

Pairing

Once schools and students were rostered, the CUNY team reviewed the information entered for accuracy and completeness. Follow-up meetings took place if any information needed to be changed. Next, a determination was made as to whether a student qualified for the Reading Rescue intervention. This was determined by the time of year, grade of the student, and student's current independent reading level. Then, matches between student and tutor were determined based on corresponding availability. The student's home language was taken into consideration. If a tutor was also fluent or well-versed in that language, that student and tutor would be paired.

Tutoring sessions

Once students and tutors were paired, remote tutoring could begin. Communications were sent to the student and their family, as well as to the tutor, providing the necessary information to meet virtually for their sessions. This information included a Zoom meeting link that was set by the CUNY team. As noted above, these sessions took place either during the school day or after school with students either present in the school building or at home depending on their mode of daily instruction for the school year—either in-person or remote. Sessions generally lasted 30 to 45 minutes and took place three to five days per week. Pre-loaded Jamboards were provided to tutors for consistency of program. Tutors shared access to the Jamboard with the students so they could interact together on the white board in real time.

Assessment

As part of the reading Rescue training, tutors were trained to provide two Acadience measures on the first and last day of tutoring. Acadience is a nationally normed and standardized assessment used to monitor foundational reading skills (Acadience Reading K-6, 2022). It was administered one-on-one by the tutor. Two subtests, nonsense-word fluency measured as whole words read (NWF-WWR) and oral reading fluency (ORF) measured as correct words read (ORF-CWR), were administered.

An informal assessment of oral reading fluency was taken every time the tutor met with the student. The tutor asked the student to read a book that was introduced the previous day, and the tutor checked off all the words the student read accurately and marked any words read incorrectly. The number of words the student read correctly was divided by the number of total words read to get a percent accuracy score. The tutor analyzed the words the student misread to determine the phonics skills that needed to be taught or reviewed in upcoming lessons. It is important to note that tutors were trained to only focus on letter-sound word reading errors to inform phonics instruction—there were no semantic or syntactic analyses conducted making this different from a typical running record. Three types of comprehension questions were also asked: literacy, inferential, and evaluative.

School year 2021–2022

Participants

Based on the success of the previous year's program, a fall cohort of 82 preservice teachers and a spring cohort of 52 preservice teachers who were enrolled in the same courses mentioned above were trained in Reading Rescue and provided tutoring to a striving reader in 1st or 2nd grade in the NYC DOE. Unlike the previous school year, tutoring was made the official fieldwork requirement for the course and no alternative fieldwork assignments were offered. Therefore, all 12 hours of training in the Reading Rescue program were required to be completed as part of the fieldwork and the remaining hours were allocated to tutoring sessions. As in the previous semester, grant money was available to motivate these preservice teachers to continue tutoring once they fulfilled their fieldwork hours. An additional 90 preservice teachers

were hired part-time to also serve as Reading Rescue tutors based on the previous year's success and the immense need reported by the schools. These tutors signed a form committing to the completion of six hours of training and a minimum of 20 sessions of tutoring. Tutors were paid \$20 per hour for training and \$20 per hour for tutoring. Tutors were scheduled to work with two students over the course of two hours. Collectively, the preservice teachers in the courses and the part-time preservice teachers who were recruited as tutors wound up serving 220 NYC DOE 1st- and 2nd-grade students (four DOE students had attendance issues and were removed from the program). More information on recruiting the participating schools and students is provided below.

Based on the pilot use of the new Reading Ready program over summer 2021 and the request from schools for this program to work with more students with emergent literacy needs, a grant from NYC DOE was obtained to recruit 39 preservice teachers in fall 2021 and then an additional 195 preservice teachers in the spring of 2022. These tutors were education majors (preservice teachers) enrolled at nine different CUNY campuses who were interested in part-time, remote work in education. Again, tutors signed a commitment form in which they agreed to complete six hours of training and provide a minimum of 20 sessions of tutoring per student. Again, tutors were paid \$20 per hour for training, and \$20 per hour for tutoring. These tutors were scheduled to work with three students over the course of two hours.

Training

The university students who were enrolled in the courses were provided with the same training experience as the students the previous year and were also mailed a full kit of materials (see section above). The part-time Reading Ready tutors were mailed a binder with the curriculum. For Reading Ready, the preservice teachers were required to attend two remote sessions. The first session was three hours long and the second session was two hours long, for a total of five hours. The training was conducted synchronously via Zoom. The training focused on ensuring tutors understood how to implement the four parts of the lessons and use data to inform instruction, and that both tutors and students knew how to engage with the remote materials.

The same observation protocol was used as reported above for the previous school year.

School recruitment

Schools were recruited similarly to the 2020–2021 school year. A significant difference for the 2021–2022 school year was a focus on schools that had a DOE Universal Literacy reading coach on staff.

The NYC DOE Universal Literacy Initiative (ULit) was implemented in the 2016–2017 school year to ensure that all students would be reading proficiently by the time they completed 2nd grade. The main driver of the ULit was the school-based reading coach, so it made sense to partner with coaches who had the motivation and availability to oversee the CUNY tutoring program at their various sites. This ULit coach was a strong point of contact who was able to focus on effective implementation and fidelity of the program, given the program's connection to their core work. Some coaches taught in person, while others taught remotely from home or remotely from school.

It should be noted that partnering with these ULit reading coaches was less possible during the 2020–2021 school year, given their redeployment as classroom teachers. New York City schools offered a hybrid model of remote and in-person classes that year, requiring many more teachers teaching in the classroom than in the year prior.

Pairing

Students were rostered and paired similarly to the 2020–2021 school year. Lessons learned from the 2020–2021 school year were operationalized to build a greater level of efficiency with these processes. These lessons and efficiencies included streamlined rostering spreadsheets, the provision of stricter deadlines for data entry, standardized policies regarding student attendance, and a more frequent review of relevant data to see if tutor-student pairings needed to be adjusted.

Tutoring sessions

Like rostering and pairing, tutoring sessions were conducted much the same way as they were during the 2020–2021 school year. The main difference this year was that tutoring was provided either in school during the school day, in schools during the after school program, or at home after school (direct-to-home). Some families decided to take advantage of the option for direct-to-home tutoring that took place after school in the child's home, as opposed to the student being on-site at the school. Many families chose to take advantage of this option due to the lack of consistent and reliable after school care programs by schools and the concomitant desire of families and their students' teachers and school leaders to ensure that these students were receiving the necessary interventions.

Assessment

In order to reduce training time and account for remote administration constraints, this cohort of tutors was trained to administer the Amira assessment instead of the Acadience assessment. Amira is a computer-based, nationally normed (based on a sample of 50,000 students, including multilingual learners and students with varying learner profiles, including speech and language disorders) artificial intelligence assessment that measures foundational literacy skills (Amira, 2022). The assessment is administered by a computerized avatar (a talking character on the screen); the student reads aloud or responds aloud while the computer avatar guides the student through the assessment.

Subtests measuring phoneme blending, nonword reading, high-frequency word reading, and oral reading fluency with comprehension were administered. A proprietary score—AERA—measures students' approximate reading age. Its factors adjusted WCPM, accuracy rate, pattern of errors on hard/easy words, and comprehension.

An informal measure of oral reading fluency was also conducted. See section on assessment in previous year for details.

Results

Results are reported for the first and second years of the program separately. In school year (SY) 2020–2021, only preservice teachers enrolled in coursework served as tutors. Acadience and Amira pre/post data were available for a subgroup of students that year. In the second year of the program, preservice teachers enrolled in the courses at Brooklyn College and preservice teachers recruited from nine of the 25 CUNY universities also served as tutors. Also, in the second year of the program, only the Amira assessment was collected pre/post. Reading level growth data are reported for both school years.

School year 2020–2021

Reading Rescue overall outcomes including intervention reading level

During the fall semester of 2020, 97 preservice teachers enrolled in early childhood literacy courses at Brooklyn College, CUNY were trained in the Reading Rescue program. Attending the training was a requirement of the course, but tutoring a child was not a requirement because the university students were not aware of this opportunity prior to registering for classes (an alternative fieldwork option was provided for this semester). Of those preservice teachers who were trained, 64 had availability in their schedule to tutor a student three to five times a week and were therefore paired to tutor a student remotely via Zoom. For this analysis, students with five or more sessions are included, resulting in 42 "students served," and 15 students received less than five sessions and were dropped from the program (see above for attendance complications during COVID-19 pandemic disruptions). A total of 1,223 tutoring sessions were provided, where 1,210 sessions accounted for the students who received 5 or more sessions. Served students received an average of 28.8 sessions and grew an average of 3.0 intervention reading levels, collected by administering daily informal oral reading assessments using the intervention books, as explained above.

A group of 12 fall semester tutors continued their tutoring after they provided their student with 20 sessions. These tutors were paid and considered Reading Rescue interns, and they continued tutoring the same students and/or took on a new student. Combining data from the fall semester and the internship opportunity that followed that semester, 60 DOE students were served, meaning they received five or more sessions, and 22 students received less than five sessions and were dropped from the program due to attendance. A total of 1,841 tutoring sessions were provided, where 1,815 sessions accounted for the students served with five or more sessions. Served students received an average of 30.3 sessions and grew an average of 3.3 reading levels, collected by administering daily written oral fluency assessments.

During the spring semester of 2021, the 85 preservice teachers enrolled in early childhood literacy courses at CUNY’s Brooklyn College were trained in the Reading Rescue program. Attendance at tutor training was a course requirement, and 83 preservice teachers fulfilled this. Twelve preservice teachers continued to tutor students after they had already fulfilled the fieldwork requirement and were considered interns for the Reading Rescue program. Combining data from the spring and the internship opportunity that followed that semester (see Table 1), 83 DOE students were tutored remotely via Zoom and received five or more sessions. Five students received less than five sessions and were dropped from the program due to attendance. A total of 2,319 tutoring sessions were provided, where 2,307 sessions accounted for the students served. Young tutoring students received an average of 27.8 sessions and grew an average of 3.3 reading levels, collected by administering daily written record assessments.

When combining data from the fall ’20 semester and following internship opportunity and the spring ’21 semester and following internship opportunity, 182 CUNY tutors were trained to implement the Reading Rescue program to 1st- and 2nd-grade students across NYC DOE Public Schools (see Table 1). A total of 143 students were served, meaning they received five or more sessions, and 27 students received less than five sessions and were dropped from the program due to attendance. A total of 4,160 tutoring sessions were provided, where 4,122 sessions accounted for the students served. Served students received an average of 28.8 sessions and grew an average of 3.3 reading levels, collected by administering daily written record assessments.

Reading Rescue Acadience outcomes

A sub-sample of students had complete pre/post Acadience assessments across the fall of 2020 and spring of 2021. Fifty-seven students who had both pre and post Nonsense Word Fluency scores, read on average 4.94 more whole nonsense words between the beginning and the end of the program, demonstrating an average growth of 43.4% in whole words read (see Figure 1). Fifty-nine students who had both pre- and post- Oral Reading Fluency scores, read on average 6.52 more words correctly between the beginning and the end of the program, demonstrating an average growth of 12.9% in correct words read.

Reading Rescue Amira outcomes

The Amira assessment was piloted in spring 2021. Due to device configuration and caregiver tech support challenges, 51 out of the 83 students served had complete pre/post data, resulting in a 61% completion rate. Table 2 shows the results across five measures. Of note is that students had an average AREA score gain of over half a year of growth (.63 months for 1st-graders, .58 months for 2nd-

Table 1. SY 2020–2021 semester breakdown of tutors, students served, sessions and reading level growth for Reading Rescue.

	Fall Reading Rescue	Spring Reading Rescue	Totals
Preservice teacher-tutors	64	83	147
Students with 5 or more sessions	60	83	143
Total sessions provided	1,815	2,307	4,122
Average # of sessions	30.3	27.8	28.8
Average Reading Level Growth	3.3	3.3	3.3

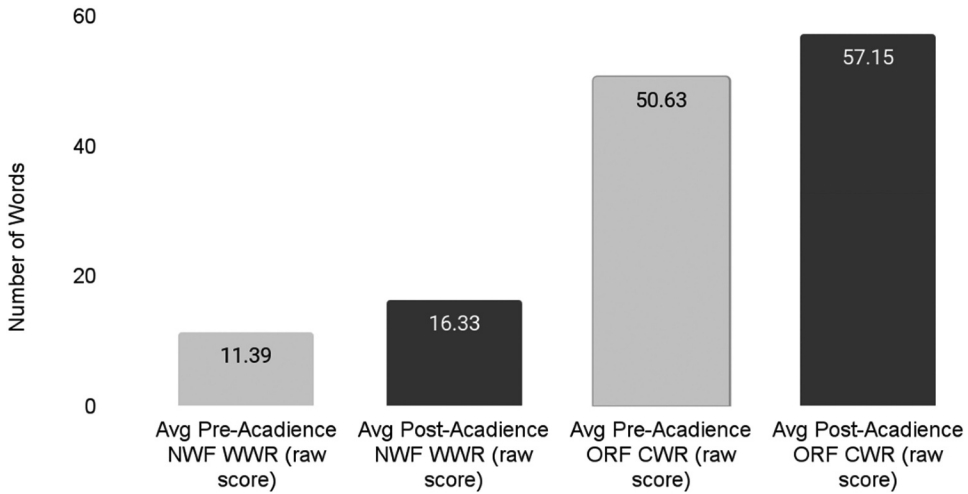


Figure 1. SY 2020–2021 Acadience outcomes for students with complete pre/post data.

Table 2. SY 2020–2021 Reading Rescue Amira pre/post outcomes.

Grade	Skill	Measure	# of students	Pre-test average	Post-test average	Average growth	% Growth ^a
1	Reading mastery	AREA (estimated reading age)	31	5.93	6.56	0.63 yrs	11
2	Reading mastery	AREA (estimated reading age)	20	6.55	7.06	0.58 yrs	9
1	Fluency	WCPM	31	28.55	33.55	5 wcpm	18
2	Fluency	WCPM	20	38.24	45.38	7.14 wcpm	19
1	High-frequency word reading	ESRI (estimated % of all high-frequency words mastered)	31	62%	73%	11%	18
2	High-frequency word reading	ESRI (estimated % of all high-frequency words mastered)	20	71%	79%	8%	11
1	P.A. blending	% correct	31	65.04	77.64	12.6	19.38
2	P.A. blending	% correct	20	72.1	79.67	7.57	10.50
1	Nonword reading	% correct	31	65.58	77.77	12.19	18.58
2	Nonword reading	% correct	20	72.64	80.37	7.72	10.63

^a% Growth: [(Post-Pre)/Pre] x 100.

The spelling task was not administered the first year the assessment was used.

graders) over an average of 28.8 sessions. This result is supported by the gains seen on the high-frequency word reading, phoneme blending, and nonword reading tasks (see Table 2). Furthermore, these sub-skills likely supported the gains made on the fluency tasks measured in words read correctly per minute (WCPM).

School year 2021–2022

Reading Ready and Reading Rescue overall outcomes

Students in the early childhood literacy courses were again required to complete the fieldwork assignment of attending training and tutoring a student in need. In addition to this group of 134 preservice teachers who served as tutors (82 from fall semester, 52 from spring semester), 90 additional preservice teachers were either newly trained or retrained from the previous year in Reading Rescue. When combining data from across the two semesters from the preservice teachers who tutored as part of their early childhood coursework or internship and those who tutored as a part-time job, 224 preservice teachers were trained to implement the Reading Rescue program to 1st- and 2nd-grade students across NYC DOE Public Schools (see Table 3). From this group of tutors, 220 DOE students were served, meaning they received 5 or more

Table 3. SY 2021–2022 breakdown on tutors, students, and sessions for Reading Ready and Reading Rescue.

	Ready	Rescue	Totals
Preservice teacher-tutors	237	224	461
Total Ss, 5 or more sessions	494	220	714
Total sessions provided (5 or more sessions)	10,434	4,677	15,427
Average # of sessions, for students with 5 or more sessions	21.12	21.26	N/A
Average Reading Level Growth		3.13	

sessions, and 36 students received less than five sessions and were dropped from the program due to attendance. In total, 4,750 tutoring sessions were provided, where 4,677 sessions accounted for the students served. Served students received an average of 21.26 sessions and grew an average of 3.13 intervention reading levels, collected by administering daily informal oral reading assessments using the intervention books, as explained above (see Table 5 for the breakdown of intervention reading level growth by bands of sessions).

In addition to the 224 Reading Rescue preservice teachers who served as tutors, 237 preservice teachers were hired as part-time Reading Ready tutors to provide the intervention to DOE students who were in need of even more emergent literacy instruction than the Reading Rescue program. From his group of Reading Ready tutors, 494 DOE students were served, meaning they received five or more sessions, and 104 students received less than five sessions and were dropped from the program due to attendance. For students who received five or more sessions, 10,677 tutoring sessions were provided, where 10,434 sessions accounted for the students served and students received an average of 21.12 sessions (see Table 3).

Reading Ready outcomes

Reading Ready data will be discussed first because it is the precursor program to Reading Rescue. Pre- and post-assessments on phoneme segmentation and nonword reading were administered at or after the 15th session, depending on the amount of time left in the school year for tutoring. Out of 309 students with 15 or more sessions, 208 students had complete pre- and post- data, resulting in a completion rate of 67.31%. Substantial growth was made on both the phoneme segmentation and nonword reading tasks, which are two key foundational reading skills (see Table 4), over the average of 21 sessions.

Reading Rescue intervention reading level outcomes

Table 5 shows intervention reading level broken into bands of sessions students received, with the overall average intervention reading level growth of 3.13 levels over an average of 21 sessions. Results indicate that students improved about one reading level per 10 sessions up to 19 sessions, and then

Table 4. SY 2021–2022 Reading Ready assessment outcomes.

Skill	Pre (N = 208)	Post (N = 208)	% Growth ^a
Phoneme Segmentation	18.1	24.8	37
Nonword Reading (words correct)	6.8	9.7	43
Nonword Reading (letter-sounds correct)	26.0	34.0	31

^a% Growth: [(Post-Pre)/Pre] x 100.

Table 5. SY 2021–2022 Reading Rescue intervention reading level growth.

Reading Rescue	Average	SD
Overall, 5 or more sessions (N = 220)	3.13	2.32
5–9 sessions (N = 33)	1.09	1.77
10–19 sessions (N = 79)	2.25	1.44
20–29 sessions (N = 62)	3.65	1.82
30–39 sessions (N = 25)	4.64	2.28
40+ sessions (N = 21)	6.38	2.18

they improved at a rate of approximately 1.5 reading levels per 10 sessions once they received over 20 sessions. These data show that students with 30+ sessions showed an average reading growth comparable to a year of growth (4–5 levels over one school year) after receiving 30–40 sessions over 3–4 months.

Reading Rescue Amira outcomes

While 187 students received 10 or more sessions of Reading Rescue (minimum length of the intervention to administer a post assessment), 108 had complete Amira pre/post assessments resulting in a 63% completion rate. Two adjustments were made by Amira from the first year of administration of the assessment: the spelling task was added and 2nd-graders no longer receive the phoneme blending task. Table 6 shows the results across six measures. First-grade students had an average AREA score gain of a year (.9 years; 11 months), and 2nd-grade students had an average of a half a year (.5 years; 6 months) of growth for over an average of 28.8 sessions. This result is supported by the gains seen on the high-frequency word reading, spelling, phoneme blending, and nonword reading tasks (see Table 2). Furthermore, these sub-skills likely supported the gains made on the fluency tasks measured in words read correctly per minute (WCPM).

Discussion

This tutoring initiative is one of the largest preservice-teacher-to-tutor pipelines in the United States, and it was created in the midst of the pandemic to improve two vital measures in the education system: outcomes for striving readers in particularly high-need communities and teacher preparedness in explicit literacy instruction.

Over the two academic years that this program has been in place, 857 NYC DOE students were tutored and 608 preservice teachers were trained in this research-backed early literacy intervention program. There are hundreds more students and preservice teacher-tutors who were enlisted in the two summer school programs that began as a result of this project. These results will be shared in a separate report.

The CUNY preservice teachers assigned to this tutoring experience, as well as those who elected to participate, received invaluable instruction in Reading Rescue, an evidence-based program, and/or Reading Ready, a research-based program. The training, materials, and feedback they received will certainly have an impact on their skills as future teachers. The critical, high-dosage tutoring the striving DOE students received while school buildings were closed—and then when schools were open, but overwhelmed—was indeed effective. The students who participated in this program benefited

Table 6. SY 2021–2022 Reading Rescue Amira pre/post outcomes.

Grade	Skill	Measure	# of students	Pre-test average	Post-test average	Average growth	% Growth ^a	
1	Reading mastery	AREA (estimated reading age)	54	5.6	6.5	0.9 yrs	16	
2	Reading mastery	AREA (estimated reading age)	55	6	6.5	0.5 yrs	8	
1	Fluency	Adjusted WCPM	56*	28	42	14 wcpm	50	
2	Fluency	Adjusted WCPM	55	31	44	13 wcpm	40	
1	High-frequency word reading	ESRI (estimated % of all high-frequency words mastered)	54	54%	74%	20%	37	
2	High-frequency word reading	ESRI (estimated % of all high-frequency words mastered)	55	61%	70%	9%	15	
1	Spelling	% correct	54	16%	25%	9%	56	
2	Spelling	% correct	55	16%	26%	10%	63	
1	Phoneme blending	% correct	54	15%	24%	9%	60	
2	Phoneme blending		Not assessed for 2nd Grade					
1	Decoding	UWF (0–100 scale)	54	33	52	20	60	
2	Decoding	UWF (0–100 scale)	55	28	30	2	7	

^a% Growth: [(Post-Pre)/Pre] x 100.

enormously from high-quality one-on-one time with instructions—and would have benefitted long before the pandemic even began.

In the Reading Ready program, a word-reading program that was designed to be the precursor to Reading Rescue, gains were made in phonemic awareness and nonword reading skills, which are predictive early literacy skills (Wang & Algozzine, 2008). In the Reading Rescue program, a comprehensive reading intervention that addresses all five pillars of literacy, gains were made in intervention reading level and overall reading age (as measured by AREA score), as well as numerous foundational skill subtests. It's important to acknowledge that students in kindergarten, 1st grade, and 2nd grade were more vulnerable to learning loss compared to students in middle school because of younger students' inability to seek learning on their own (Donnelly & Patrinos, 2021). While students were falling further and further behind in the midst of school disruptions and the shift to online learning, the young learners participating in these tutoring programs were practicing and improving their reading skills with a caring educator.

This program addressed pandemic-related learning loss by providing students in historically underserved communities with highly trained tutors who delivered an evidence-based (Reading Rescue) or research-based (Reading Ready) program. This type of tutoring experience is an invaluable addition to their educational experience at this young age (Robinson et al., 2021).

During a time when school buildings were closed, staff was limited at schools, and children were participating in remote learning, higher-income families were able to afford tutors or "private pod" teachers, a privilege students in lower-income communities did not have. This is part of the value of the Reading Ready/Rescue tutoring program; through this initiative, the Reading Ready/Rescue programs were able to provide almost 20,000 free tutoring sessions to children from families who could not otherwise afford a private tutor. The commitment demonstrated by the tutors and the dedication of families and schools to ensure that young students were showing up for their tutoring sessions encapsulated the power of the relationship between the preservice teacher-tutor and their students, along with the students' families and schools. The result of this partnership can immediately be seen in the foundational skill and reading level growth outcomes.

This tutoring initiative also addressed the complex issue of teacher training. Teachers need a wealth of knowledge of their own in order to effectively teach children to read. All too often, college and university teacher-preparation programs fail to adequately prepare teachers in this regard (Cohen et al., 2017; Crim et al., 2008; Moats & Foorman, 2003; Puliatt & Ehri, 2018; Washburn et al., 2011). Of course, the situation has only been exacerbated by the pandemic and all the unfinished teaching and learning that has resulted.

The CUNY tutoring program, using Reading Ready and Reading Rescue, strove to remedy this larger issue. Not only did the program provide training in evidence-based and research-based programs, it provided these preservice teachers with important background knowledge on the content and pedagogy involved—the reasoning behind these programs and why they are effective.

Vitally, the tutoring program allowed pre-service students to actually put what they learned into practice through hands-on reading intervention experience prior to receiving their teacher certification. Their practice is made all the more effective because of the coaching provided by "lead instructors"—expert-level tutors who observed lessons, conducted fidelity checks, and delivered ongoing support to hone skills.

Reading Rescue continues to build its evidence base for use with striving readers in underserved communities who are typically students of color, and are often linguistically diverse (Ehri et al., 2007; K. Miles et al., 2018; Muller, 2004). This initiative has the potential to expand the evidence base in two ways: 1) to show that the program can be effectively administered remotely and 2) to show that the program can be effectively administered by preservice teachers. This project also provided an opportunity to pilot the use of a research-based emergent word reading program that was critically needed during the first years of the COVID-19 pandemic. The Reading Ready results are substantial, and demonstrate that the program is ready for a randomized control trial study to build its own evidence base.

The type of educational services that these CUNY preservice teachers were able to provide is aligned with the growing body of evidence that indicates the value of early reading interventions; these trained tutors were able to provide one-on-one, high-dose, effective reading instruction multiple times a week. To compound this effectiveness, the children selected to receive this type of tutoring from the CUNY students were those for whom this service is most needed. They were children from low-SES households, for whom early intervention makes a strong difference (Dietrichson et al., 2017; Vadasy & Sanders, 2010).

Limitations

There were limitations to what was possible for the tutoring initiative described here. Some were related to the sheer fact that the COVID-19 pandemic caused massive disruptions to nearly all areas of daily life, but there were other challenges, as well. Most notably, randomized assignment of students to varying conditions of tutoring was not possible, as CUNY worked with DOE schools to pair every student quickly. There was also no time to set up a control condition. Another major limitation was that uneven student attendance, exacerbated by the pandemic and all its disturbances, made it difficult for some students to consistently attend sessions.

Since the children being tutored were so young, the advent of vaccination did not immediately help stabilize the program, as it was quite some time before this age group became eligible for the shot. When a student did contract COVID-19, they needed to quarantine for 10 days, resulting in an even more significant incidence of absences. And the absences were only exacerbated as new variants of the virus took hold in communities. Tutors were absent as well, of course, for similar reasons.

School sites were similarly impacted. An NYC DOE-wide staff vaccination mandate in the fall of 2021 caused widespread staffing shortages that affected the school support of the students being tutored. While this tutoring was done virtually, the young students being tutored needed to be supervised and supported with the use of technology. Staffing shortages made this already challenging task even more difficult to accomplish.

Another limitation was the lack of seamless, user-friendly data collection and management. There was no specific data system available to use to collect and manage the copious amounts of data involved in the tutoring program. Microsoft Excel was the only available resource for collecting such data, which required the CUNY staff to maintain numerous formulas across hundreds of individual student data trackers. Further, matches between student and tutor needed to be made manually since an application that made it possible to match them automatically was not available.

Lastly, NYC DOE policy dictated early in the 2021–2022 school year that tutoring could only take place after the school day had ended. Scheduling immediately became a challenge, which led to planning and implementation difficulties. Not every student selected for this tutoring initiative stayed after school, and some of the tutors were not available at this time. This restriction was lifted for the spring semester, which helped to ease the difficulty previously experienced.

Future research

Using the tutoring initiative described here as a springboard, there are multiple possibilities for future research. As previously mentioned, this was a COVID-19 response project and, therefore, it was not ethical to randomly assign students to conditions when all the students contacted for participation were in need of literacy intervention. The outcomes of this initial partnership show that the implementation of the program, conducted over two years, is solid. The next step is to conduct a randomized-control trial study to determine the efficacy of the new Reading Ready intervention and to contribute to the efficacy of the Reading Rescue program by showing that it can be implemented remotely by preservice teachers with similar outcomes to when it is delivered by school staff members.

Although the Reading Ready and Reading Rescue programs have been described separately in this article, there were a few students who started with Reading Ready and progressed to Reading Rescue as their learning at the “Ready-level” was solidified. A future study of this type of tutoring program might look at the optimal frequency, intensity, and duration of implementing the Reading Ready program to either mitigate the need to receive the subsequent Reading Rescue program or to ensure that there is time enough during the school year for the student to receive both intervention programs. Another direction would be to investigate the benefits of having tutors learn both intervention programs, therefore putting them in a position to be able to work with students at different stages of their early literacy development in order to best address learning gaps in schools due to the pandemic. In the tutoring initiative described here, pre-service teachers were only trained in Reading Rescue or Reading Ready.

The provision of a suitable data management system designed to offset the data-related limitations noted above would provide for more robust implementation. Similarly, more support could be provided to school sites in terms of scheduling and the provision of technology-connected devices and headphones, specifically.

In the future, tutoring support should be offered at times that suit the needs of students, their families, and their schools. This type of tutoring support is key to post-pandemic acceleration of learning, and offering tutoring sessions at times when students are actually available will allow the scale of the program to reach its full potential. As mentioned above, in the second year of the program, NYC DOE dictated that the service could only be offered as an intervention delivered in the school building during after school hours. This restriction was quite detrimental to the flow of the program, since many after-school environments were chaotic and had staff shortages that impacted students’ ability to successfully log into the sessions. After struggling with attendance for two months, the authors decided to offer the program to schools when it worked best for them—during the school day, after school if the conditions were right, or direct to home. Future research should investigate differences in implementation, attendance, and outcomes across these three delivery modes.

Conclusion

In summary, this tutoring initiative generated numerous positive outcomes: 1) it provided an evidence-based training and teaching opportunity for preservice teachers, 2) it provided a paid tutoring opportunity for preservice teachers so they have a career aligned part-time job, 3) it provided evidence-based and research-based tutoring for DOE striving readers in low ELA proficiency schools, 4) it increased staff capacity at some of the most underserved schools in NYC DOE, and 5) it provided an opportunity to pilot the new precursor program, Reading Ready, and expand the body of evidence for the Reading Rescue program by having preservice teachers serve as remote tutors.

The transformation that occurred at both CUNY and the NYC DOE through the Reading Ready/Reading Rescue collaboration has ignited conversations among government agencies, university deans, and philanthropies alike about the continued implementation of programs that enable pre-service teachers to provide high-dosage, evidence-based tutoring to some of the most high-need communities. These are the children who were the most impacted by learning loss due to the pandemic, and were most at risk for reading failure even before it began. The results of this tutoring initiative suggests that more programs such as Reading Ready and Reading Rescue—and the partnership that grew between these programs and a local university—should exist to inculcate teachers with dynamic teaching skills as they, in turn, equip students with robust reading skills. There is a mutual benefit for students and teachers in this initiative, and communities would be well-served if there were more such partnerships.

Disclosure statement

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