Recruitment, Training, & Support: Impacts of A District-Partnership Tutoring Model to Support Elementary Literacy Skills

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Abstract

This study presents findings from a multi-site student-level stratified randomized evaluation of Ed Corps, a tutoring program that provides tutor recruitment and training as well as implementation support for high-impact tutoring. We find that relative to a business-as-usual control, students in grades K-3 assigned to receive Ed Corps-supported tutoring score 0.15 SD higher on their end-of-year DIBELS Composite scores and 0.18 SD higher on a researcher-developed index aligned to the specific literacy skills each student struggled with at the beginning of the year. While we find positive (though not significant) impacts for a wide variety of student and school subgroups, there is some evidence that boys may benefit more than girls, potentially due to different experiences in Tier 1 instruction.

Keywords: tutoring, early literacy, implementation

Introduction

Despite more than two decades of attention and resources dedicated to improving elementary students' literacy skills, more than two thirds of 4th graders are reading below grade level (National Center for Education Statistics [NCES], 2024). Tutoring is widely accepted as an effective strategy to improve early literacy skills (Allor and McKathren, 2004; Ritter et al., 2009; Herrera et al., 2021; Neitzel et al., 2022) and high-impact (or high-dosage) tutoring has been increasingly adopted by school districts as a promising approach to accelerate student learning. These efforts have been supported by the Elementary and Secondary School Emergency Relief Fund (ESSER, 2021). High-impact tutoring is characterized by several elements, including three or more sessions in a week, the use of formative assessment and alignment with the school curriculum (Robinson and Loeb, 2021). Despite efforts to provide high-quality, high-impact tutoring to students, districts continue to face challenges with successful implementation, including inadequate funding, limited tutor supply, and scheduling conflicts. This study examines the impacts of a district-partnership tutoring model where an external partner works directly with school districts to relieve key pain points around implementing high dosage tutoring at scale including tutor recruitment and training, district and school-level coordination, and implementation monitoring and ongoing support.

Background

Elementary literacy skills had been improving incrementally during the early 21st century ([NCES], 2019), but the COVID-19 pandemic in 2020 created new challenges, with little evidence showing a notable rebound in the years following the global recovery from the pandemic. The most recent 2024 national results show that average reading scores declined for 4th graders by 3 points compared to 2022, by 5 points compared to 2019, and showed no

significant change compared to 1992 when the assessment was first implemented ([NCES], 2024).

To further strengthen students' reading proficiency, a growing number of states have embraced policies aligned with the "science of reading," (Snowling & Hulme, 2005), enacting laws that mandate evidence-based methods for elementary literacy education, including classroom instruction, intervention, and teacher preparation (Schwartz, 2022). Aligned with this philosophy, high impact tutoring programs that adopted these research-supported approaches have played a crucial role in supplementing classroom instruction in elementary schools, especially since the pandemic. However, with recent research finding more variable impacts of tutoring in the wake of its widespread adoption than had previously been expected (Kraft et al, 2024), it is more important than ever to identify promising tutoring models that have the ability to improve student learning at scale (NSSA, 2024).

High impact tutoring: effectiveness and implementation challenges

There is robust evidence from a number of meta-analyses that tutoring programs in elementary schools, commonly implemented as Tier 1 or Tier 2 interventions within a Multi-Tiered System of Supports (MTSS), are effective in improving literacy skills for young students with reading difficulties, especially in early grades (Wanzek et al., 2018; Denton et al., 2021; Gersten et al., 2020). A recent comprehensive meta-analysis of pre-kindergarten through 12th grade tutoring interventions by Nickow et al. (2023) found tutoring programs yielded consistently positive impacts on learning, particularly for programs that target earlier grades, take place in school, and occur at least three times per week. For literacy interventions, the authors found a statistically significant pooled effect size of .29 SD among all tutors, and even higher effect sizes when tutors are teachers or paraprofessionals. A more recent study by Bachmann et

al. (2025) further demonstrated the important role of in-person school setting in tutoring impact, as the authors found 1:1 school-based oral reading fluency intervention dosage was a particularly strong predictor of weekly growth for second and third grade students participating in a high-impact tutoring program, compared to home reading practices.

Recognizing the positive educational outcomes of high-impact tutoring and the recent availability of funding for this type of intervention, some school districts have launched tutoring programs, either internally by leveraging existing school and district staff or through hiring external vendors (The Center for Education Market Dynamics, 2023). However, challenges have emerged in scaling up and fully implementing many tutoring programs to effectively support student success. A recent paper examining the impact of a large district-operated tutoring program titled Accelerating Scholars highlighted several challenges faced by the district in operating such programs at scale, including a limited tutor supply for staffing the program, scheduling constraints that make it hard to offer a sufficiently large number of tutoring sessions, and time-constrained funding sources that do not ensure the sustainability of programs (Kraft et al., 2024a). Other research has highlighted the need for more coordination between district decision-makers and school-based staff, including clear guidelines and processes for identifying eligible students (Makori et al., 2024).

Given district staffing levels, the number of students to be served, and the logistic complexity of implementing quickly and with high quality, most school districts have ultimately decided to work with external tutoring service providers to support struggling readers (The Center for Education Market Dynamics, 2023). These external tutoring vendors typically employ paid or volunteer tutors, use a proprietary curriculum, and engage in implementation monitoring. There is typically variation in tutoring group size, with some programs offering 1:1 support

while others use small groups, and tutoring modality, with an increase in online learning options allowing for more virtual tutoring in recent years (Robinson & Loeb, 2021; White et al., 2022, Nickow et al., 2023; Robinson et al., 2024). As has been the case historically, recent evaluations continue to identify many different individual programs that are effective at improving student learning (Chapter One, n.d.; Cortes et al., 2025; Kortecamp & Peters, 2023; Markovitz et al., 2021; Neitzel & Storey, 2024).

However, implementation research has continued to highlight that these external vendors face many of the same challenges as district's homegrown tutoring programs. Labor and staffing challenges including recruiting qualified tutors, and logistical obstacles including scheduling conflicts and tutor training are among the top barriers in the implementation of high-impact tutoring programs, especially in the post-COVID era (Pearce and Shoemaker Demio, 2024; Groom-Thomas et al., 2023; Condliffe et al., 2023; Carbonari et al., 2024). Additionally, securing funding to pay for external vendors continues to pose challenges for school districts seeking to scale up high-impact tutoring and tutor type and tutor student ratio can significantly affect the program cost (Guryan et al., 2023; Kraft & Falken, 2021). Securing district- and school-level buy-in has also been identified as crucial for successfully implementing high-impact tutoring on a larger scale (Kraft & Falken, 2021; Groom-Thomas et al., 2023). And finally, particularly for virtual tutoring programs, student attendance and low-take up rates potentially limit the observed effectiveness of some programs (Cohen, 2024; Groom-Thomas et al., 2023). Given the numerous ongoing challenges schools currently face in supporting students' learning, administrative burdens on districts will likely persist, limiting the capacity of school districts to advance student learning through their own internally run high impact tutoring programs (Kraft et al., 2024b).

A district-partnership as an alternative model

Given the challenges in implementing high-impact tutoring programs, recent studies have highlighted models that incorporate efforts to deliver some level of tutor training and that develop strategic partnerships with school districts to ensure effective delivery of tutoring services. Education Corps (Ed Corps), formerly known as North Carolina Education Corps (NCEC) has emerged to provide a unique model, that is designed to address key implementation barriers that schools and districts face in implementing effective tutoring programs. Launched in September 2020 by the NC State Board of Education and Office of the Governor, North Carolina Education Corps is a nonprofit focused on collaborating with Local Education Agencies (LEAs) to provide in-person, at-school, during the school day, high-impact tutoring support to elementary school students who are performing below grade-level benchmarks in literacy. With its mission to accelerate student learning and strengthen communities, Ed Corps serves as an intermediary support to help alleviate the primary pain-points schools and districts face when implementing high-impact tutoring, including recruiting and recommending tutors, training and coaching tutors, monitoring progress and evaluating student learning and using evidence-based curricular materials. Unlike other literacy tutoring programs that manage their own tutors and often use propriety curricula, the Ed Corps model does not rely on developing or carrying out their own tutoring program; instead, they provide support to schools and districts for implementing high-impact tutoring services to students. The Ed Corps tutoring model is focused on the following features: 1) tutor recruitment and training, 2) strong collaboration with partner schools and districts, and 3) implementation monitoring and ongoing implementation support. They specifically support district tutoring efforts with the high-quality tutoring services, including high dosage small group tutoring and classroom-aligned curriculum. To date, no other

rigorous studies have explored the effectiveness of the Ed Corps model. If effective, their approach could provide valuable insights for school districts who need support in providing effective, well-implemented, and scalable interventions to support early literacy learning for students.

Tutor recruitment and training

While some educational intervention programs recruit certified teachers to serve as tutors, many tutoring programs do not exclusively rely on trained educators to support student learning. Instead, programs such as Reading Partners (Jacob et al., 2016), Saga Education (Guryan et al., 2023), and Americorps (Codding et al., 2022) recruit volunteers and community members and provide essential training to tutors before tutoring begins. Similarly, in the Ed Corps model, anyone with a high school diploma (or equivalent) is welcome to apply, and the tutoring corps often includes individuals with a range of professional backgrounds, including former educators. Ed Corps takes the lead in advertising job positions, collecting tutor applications, and making hiring recommendations to the districts. Ultimately, tutors are hired by the districts as employees based on Ed Corps recommendations. All hired tutors are considered Ed Corps members and participate in Ed Corps training.

Compared to many literacy programs, in which training may vary from a relatively short onboarding session of one hour (e.g. Jacob et al., 2016) to intensive training consisting of eight courses (Kortecamp and Peters et al., 2023), the Ed Corps model requires over 20-hour intensive training upon hiring. Once hired, tutors are required to participate in both asynchronous and synchronous trainings before tutoring starts. The 20-hour asynchronous training is designed to equip tutors with knowledge and expertise, and strengthen their confidence in supporting literacy learning for elementary students. In alignment with the science of reading, courses include

"Becoming an Effective Tutor" and "K-5 Foundational Literacy Tutoring", with each containing a list of modules focused on corresponding pedagogical strategies, such as tutor technique and content-specific competencies (Ed Corps, 2023; Hudson et al., 2021). Integrated into regular programming, tutors are also invited to participate in the Ed Corps program kick-off event with the district before tutoring officially begins. In the kickoff meeting, tutors engage in a 2-hour capstone group training on navigating the intervention program on the digital tutoring platform, which they will use for tutoring materials and data progress and monitoring.

As part of the ongoing coaching support system, Ed Corps also offers optional monthly professional learning community workshops to tutors, where learning coaches select timely and relevant topics aligned with tutors' needs and feedback for a discussion to help tutors build rapport with one another while improving peer practices. Past topics include *Seeing all students: culturally responsive strategies and supporting multilingual learners*, *Knowledge is power: making instructional decisions* and *Maximizing impact: student engagement strategies.* A learning coach usually follows up with tutors attending the monthly meeting to learn about their recent experience regarding the topic and address any questions they may have. This ongoing coaching support is well-aligned with the best evidence for educators' professional development programs (Desimone, 2009).

Strong partnership with school districts

Ed Corps' tutoring model employs its own district program managers to secure buy-in and engagement from school and district leadership, and to further ensure a smooth tutoring implementation. Partnership efforts are primarily focused on building relationships with district leadership, holding monthly meetings with a district representative to review goals, attendance, progress, and feedback on tutoring, as well as to troubleshoot issues, and occasionally explore

funding opportunities for the districts. Additionally, the Ed Corps team appoints another staff member to oversee data collection and analysis, and to ensure schools receive data and accountability information as needed. As part of the implementation debriefing process, Ed Corps typically provides a single data-informed evaluation report to partner districts in early spring, summarizing BOY-to-MOY DIBELS outcomes for Ed Corps-supported students compared with non-Ed Corps students.

District relationship management extends to each of the partnering schools. Each participating school in the tutoring program will identify a tutoring lead, usually a Multi-Tiered System of Supports (MTSS) coordinator responsible for school-based intervention programs, to facilitate Ed Corps–supported tutoring. Serving as a liaison between the Ed Corps and the school, tutoring leads work closely with tutors to ensure clear communication and to troubleshoot academic, administrative, and logistical challenges within the school building.

Implementation monitoring and ongoing implementation support

Ed Corps uses Littera, an online tutoring platform, to monitor tutoring implementation and collect student tutoring behaviors in partner schools. Tutors are required to log each tutoring session in Littera to record student attendance and provide brief feedback on several data elements, including skills covered for the session, student engagement, and skill progression. NCEC will then use aggregate data from Littera to provide a monthly, or more frequently if needed, data report to the partner district, which typically includes an overall snapshot of tutoring implementation at the district level, and a breakdown of school level information, such as the number of total hours delivered, the count of completed sessions, average session length, student and tutor attendance rate, and the number of enrolled students.

As a key component of implementation support, Ed Corps designates a learning coach with decades of professional experience as an educator in each partner district throughout the school year to support tutors in general, and in particular to troubleshoot issues and offer tutoring-related feedback whenever needed. They also use Littera to identify issues and provide prompt support to tutors. As an overall problem-solving agent, learning coaches hold online coaching sessions for tutors as requested and are available via calls and text messages at all times. Tutors may have frequent conversations with learning coaches during the initial phase of tutoring when technical and behavioral management issues are more likely to occur.

Learning coaches generally conduct two non-evaluative, in-person site visits at each school assigned to them per year to help improve tutors' teaching practices and enhance communication with tutors and tutoring leads. During site visits, they observe a tutoring session and provide the tutor with a written summary of the observation, followed by a virtual post-visit debrief primarily focused on goal setting.

High-dosage small-group tutoring

Ed Corps supports high dosage tutoring that features in-person tutoring sessions where trained tutors work with small groups of up to 4 students for at least three sessions per week, with sessions lasting 30 minutes. The program model intends to provide a total of 30 sessions for each student, amounting to 15 hours of tutoring. This program design is aligned with National Student Support Accelerator standards (n.d.) for high-impact tutoring.

Classroom-aligned curriculum

Serving as a backbone support, Ed Corps provides tutoring intervention using an evidence-based curriculum chosen in consultation with their partner schools. Per North Carolina state laws (North Carolina General Assembly, 2021), where the Ed Corps programming is

currently offered, public schools are required to use research-based curricula to guide early literacy practices. Over the course of its programming, Ed Corps has adapted its use of curricula to meet the needs of its partner schools and districts using multiple different intervention curricula grounded in the science of reading (Snowling & Hulme, 2005).

Research questions

This study is designed to explore the effectiveness of the Ed Corps model for students reading below grade level in grades K-3 at nine schools in North Carolina during the 2024-2025 school year. We investigate the following confirmatory research questions:

1) What is the impact of access to Ed Corps-supported literacy tutoring for early elementary students on overall early literacy skills?
2) What is the impact of access to Ed Corps-supported literacy tutoring for student-specific reading subskills targeted by the intervention?

We also further explore student outcomes as a result of Ed Corps tutoring, including:

3) How does the impact of access to Ed Corps-supported literacy tutoring vary across student demographic groups (e.g. race, gender, EL and IEP status, grade level), subgroups based on student attendance rates, and school-level characteristics?
4) How does student growth compare between students receiving full (at least 15 hours) vs. moderate (9-14 hours) vs. low dosage (less than 9 hours) of Ed Corps-supported tutoring?

Methods

Program Description

During the 2024-2025 school year, all partner schools utilized the mClass reading intervention program, which has proven effective in supporting literacy growth for early elementary students (Pappas et al., 2020). Operating on Amplify tutoring, a digital education

platform, the mClass intervention aligns with the mClass reading assessment tool already in use for classroom instruction in partner district.

Before tutoring began, students were grouped based on their beginning-of-the-year benchmark assessment scores, initial skill measurement, and classroom schedules. Designed on a 10-day learning cycle, the mClass intervention program generates lessons in a 10-day roadmap with detailed preparation guidance for tutors. Tutors can access the progress monitoring data of students inside the Amplify platform via two reports -- Class Summary & Student Summary to monitor students' growth, attendance, and skill development.

Each tutoring session consisted of approximately five activities, in which core content and a practice game are included to ensure targeted skills are covered while keeping students engaged throughout the lesson. Tutors are encouraged to follow the scripted tutoring materials while incorporating their own personality and excitement. An intervention kit, including well-scripted materials, practice cards, and assessment book, is also provided to all tutors prior to the start of the program.

Research design

The study used a student-level randomized control trial (RCT) that was designed to estimate the impact of being assigned to receive Ed Corps-supported tutoring at the start of the academic year (an intent-to-treat, or ITT, estimate). Research protocols including the randomization plan, confirmatory outcomes, and analytic approach, were preregistered and published on the Open Science Foundation website.[1] Individual students were stratified within schools and grade levels to either receive Ed Corps group tutoring or to receive business-as-usual supports provided by their school, with the number of tutoring slots available in each school-by-

[1] The OSF pre-registered analysis plan can be found here: https://osf.io/zfjqw/overview?view_only=592936d255d9479782b0326ab5da4454

grade combination determined by the tutoring schedules set jointly by the school and Ed Corps staff. The list of students assigned to treatment were returned to Ed Corp, and the student grouping for tutoring were conducted based on the mClass intervention algorithm.

Sample

This study took place in a large school district in North Carolina, at nine of the district's previously identified Tier 2/Tier 3 schools. Tier 2 and Tier 3 schools are identified based on several criteria and often include schools with 1) teacher attrition and/or higher numbers of new teachers; 2) lower student academic performance; and 3) higher populations of economically disadvantaged and multilingual students.

At the beginning of the 2024-2025 academic year, the partner Tier 2 and Tier 3 schools identified 867 students in total in kindergarten through third grade who were below grade level in literacy skills according to their district benchmarking assessment (DIBELS). 312 (36%) out of the 867 students were randomly assigned to the treatment group to receive Ed Corps-supported, tutoring based on available tutoring slots. The observable baseline characteristics of the sample are shown in Table 1. Black (41%) and Hispanic (39%) each accounted for approximately 40% of the sample. Approximately 10% of the sample was White, and the remainder were Asian, Native Hawaiian or Pacific Islander, or biracial and multiracial. About a third of the sample (33%) were designated as students with limited English proficiency while approximately 15% were identified as Exceptional Children (EC) who have access to Individualized Education Program (IEP) services. The control group students scored approximately six points lower on the beginning-of-the-year (BOY) DIBELS composite score, compared to those in the treatment, though this difference was not statistically significant.

Overall, the demographics characteristics across the two randomized groups were well-balanced, with no statistically significant differences.

Measures

Reading Assessments

The reading assessment used in this study is Dynamic Indicators of Basic Early Literacy Skills (DIBELS), a nationally standardized assessment designed to measure students' early literacy skills and identify risks for struggling young readers. The DIBELS assessment, which consists of a set of specific subtests that evaluate key reading skills, such as phonemic awareness, phonics, and fluency, was administered to K-3 students in all participating schools in the study at the beginning (BOY), middle (MOY), and end of the school year (EOY).

One of the primary outcomes for this study is the **end-of-year DIBELS composite score**, which is derived from a weighted combination of DIBELS subtest scores and reflects a student's overall literacy performance.

In addition to using the DIBELS composite score as the major outcome, the research team created an alternative composite, which we term the **student-specific DIBELS index**, representing the student-specific subskills from the DIBELS assessment targeted by Ed Corps - supported tutoring and the mClass intervention system.

The index was created as follows. Student scores on each of the administered subtests at the beginning the year were evaluated against the grade-level benchmarks for that subtest. Standardized versions of these scores, using the grade-specific benchmark and study-sample standard deviation were then averaged for all subtests where each student was below benchmark. Scores on subtests where students were above the grade-level benchmark were not included in the computation of their score. The same student-specific set of subtests were used to create the

MOY and EOY values of this index. This measure represents student performance on the specific set of skills they struggled with at the start of the year and that the mCLASS intervention curriculum was designed to target. Overall, these scores were highly correlated with the DIBELS composite score across grade levels and time points (Pearson correlation ranged from 0.71 to 0.98) with the exception of third grade BOY scores, which were only correlated at 0.29.

The research team also included an end-of-grade (EOG) Grade 3 reading assessment score as an exploratory outcome for the third graders in the analytic sample.

Other Administrative Data

Ed Corps provided the research team with extensive implementation data for the treatment group students who received Ed Corps tutoring using their tutoring tracking system (Littera). This data includes session-level information such as date, time, length, and literacy skills covered, and student-level information, including tutors' feedback on individual students for each session, such as attendance, engagement, and skill progression.

Additionally, the partner district provided demographic data for all students randomized in the sample, including gender, race/ethnicity, English Proficiency status, EC status, and their attendance for the 2024-25 academic year.

Analysis

The intent-to-treat (ITT) impact of NC Ed Corps-supported tutoring was estimated using linear regression of the form:

$$\mathrm{Y_{igs}} = \beta_0 + \beta_1 Tutor_{igs} + \Gamma X_{igs} + \phi_{gs} + \varepsilon_{gs}$$

The *Tutor* variable took on a value of 1 for students assigned to receive Ed Corps tutoring and 0 otherwise. The coefficient provided the estimate for the average impact of tutoring, controlling for covariates (X_{igs}) and school-by-grade fixed effects, (ϕ_{gs}) which account for the

random assignment blocks. The dependent variable was the outcome of interest. Baseline covariates (X_{igs}) included: gender, race/ethnicity, IEP status, EL status, as well as a pre-test measure of literacy achievement from fall benchmark assessments, and school-by-grade fixed effects. Standard errors were clustered at the school-by-grade level to account for differing random assignment ratios and the lack of independence between students in the same school.

Both confirmatory research questions were estimated on the full sample using the specified equation. To answer research question #3 (about the differential effect for student groups) the research team analyzed impacts separately for each subgroup. Outcomes were from Spring 2025 DIBELS composite scores and no outcome data were imputed. For missing covariate data, the analysis included mean imputation of covariates, and if a variable was missing for more than 10% of the sample, an indicator of missingness.

Results

Implementation

In line with its program model, Ed Corps recruited, selected, and trained 15 tutors at the start of the 2024-2025 school year. Training took place in early fall of 2024 before tutoring began. Over the course of the year, two tutors resigned and were replaced by additional tutors that received the same training. In total, 17 individuals served as Ed Corps tutors in study sites (Table 2). Of these 17 individuals, approximately half (n=8) had completed a master's degree, thirty-five percent (n=6) had a bachelor's degree, and the remaining 12% percent (n=2) had a high school diploma or equivalent; one tutor's highest level of education was unknown, but as a former educator, they likely had completed at least a bachelor's degree. Nine of the 17 (53%) were current, former, or retired educators, and the majority (73%) had previously served as an Ed Corps tutor.

Tutoring sessions began in early October and continued through April or May. While the typical Ed Corps tutoring program recommends 30 sessions delivered over approximately 10 weeks, students in the treatment group were eligible to receive tutoring throughout the entire school year. Table 3 presents a summary of tutoring implementation for the treatment group. Of the 312 students who were assigned to the treatment group, 265 successfully attended at least one Ed Corps tutoring session (85%). Of the 47 treatment group students who received no tutoring sessions, 41 of these students were documented as participating in English-language or special education supports during small-group time that took priority over tutoring. For students who participated in any Ed Corps tutoring, students were offered an average of 49.6 sessions overall, ranging between 45.7 (for Grade 3) and 52.9 (for Grade 2), all well above the target of thirty. Attendance rates were typically high as well, with students attending 84.3% of the sessions offered, resulting in an average of 21.2 hours of tutoring for the average student. Dosage was relatively consistent across grade levels, although second graders had both the most sessions as well as the highest attendance rates, resulting in an average of 23.7 hours of tutoring.

Beyond dosage, other features of implementation were also consistent with the Ed Corps program model. Average tutoring group sizes by grade level ranged from 2.9 students (Kindergarten) to 3.3 students (Grade 2), and student engagement during tutoring sessions was rated highly by tutors. Tutoring sessions typically covered two or three discrete literacy skills. Across the sample, the most common were: oral reading fluency, phonemic awareness, blending-phonics, high-frequency words, and word fluency. For each student, a plurality of sessions focused on their most frequently covered skill; this is unsurprising given that the mClass intervention was designed to target specific skill deficits identified in beginning of year assessments, and the Amplify platform algorithmically grouped students based on similar needs.

Due to tutor turnover, students did typically work with more than one tutor over the course of the year, but never more than two.

Treatment-Control Contrast

Information about how Ed Corps -tutoring complemented existing literacy instruction was collected from schools' multi-tiered system of support (MTSS) leads at each of the nine schools, as well as by the Ed Corps learning coach who conducted site visits as part of implementation monitoring. Ed Corps -supported tutoring typically took place during schools' small-group/intervention time. During this time, students were typically placed into leveled groups based on reading skill for additional independent or small-group practice, teacher-led instruction, or intervention support. This time was also used for other intervention pull-out programs, such as additional services for English learners and special education. Some of the more common literacy-focused programs in use included: WonderWorks intervention, Reading Warriors, West Virgina Phonics, literacy interventions developed by UFLI and FCRR, and more generally, intervention groups with the MTSS lead. Additionally, in two schools, some control group students received mClass intervention, the same curriculum used by Ed Corps tutors.

Overall, according to the MTSS leads, approximately half of the control group students received some explicit form of literacy-focused intervention beyond just small group practice. However, there was substantial variability across schools and grade levels. At one extreme, in two schools, only around 10% of control group students explicitly participated in alternative literacy interventions programs. In three other schools, however, more than 80% of the control received supplemental literacy instruction through an explicitly named program.

Program impacts

Outcome data was collected for 830 students, representing an attrition rate of only 4.3 percent. Attrition was balanced between the treatment (4.32%) and control (4.17%) groups. Impacts of Ed Corps tutoring on the two confirmatory outcomes are presented in Table 4. After controlling for covariates, students assigned to receive Ed Corps tutoring scored 3.77 points higher on the EOY DIBELS Composite Score (ES = 0.15, $p = 0.04$) than students in the control group. On the student-specific DIBELS index, treated students scored 0.18 standard deviations higher than control group students ($p = 0.03$). This table also includes the effect of Ed Corps tutoring on the broader set of reading comprehension skills measured by the North Carolina end-of-grade state assessment for the 163 third graders in the sample. While not statistically significant ($p = 0.39$), the estimated impact is positive and similar in magnitude to the effect on the DIBELS Composite Score (ES = 0.13).

Table 5 shows the impacts for a variety of student-level demographic subgroups for whom we explored heterogeneity of effects. We find positive, though mostly not-significant effects on the EOY DIBELS Composite for: Black students, Hispanic students, White students, boys, English learners, non-English learners, students with Exceptional Child (special education) status, those without, and across all grade levels of the sample. There is some evidence that the impact of Ed Corps tutoring may be concentrated among boys (ES = 0.33 SD, p<.001) relative to girls (ES = -0.02, p = 95), although the difference in impact between the two is not statistically significant. Magnitudes of impacts on the student-specific DIBELS index are comparable and are statistically significant for Hispanic students (ES = 0.29, p=0.007) and boys (ES = 0.35 SD, p=0.001) and marginally significant for students without Exceptional Child status (ES = 0.18 SD, p=0.054). Again, none of the observed differences *between* subgroups reach the threshold for statistical significance.

We also explore whether the impacts of Ed Corps tutoring differ based on contextual features. For example, we separately estimate effects for students who were chronically absent in the 2023-2024 school year and those who had attended at least 90% of school days. There is a positive and statistically significant effect for students who were not chronically absent (ES = 0.21, p=0.02). We also look at whether the impact of Ed Corps tutoring differs based on the tutors' prior experiences as educators. We find positive, though not significant, effects for schools whether all tutoring was delivered by former educators, some tutoring was delivered by former educators, or no tutoring was delivered by former educators. Finally, we explore effects among schools with higher, moderate, or lower levels of dosage. For this analysis, schools were grouped evenly into three categories (high, moderate, and low) based on student average dosage levels. While all point estimates are positive, the Ed Corps impacts are largest and significant only for the schools at the lowest range of average dosage (ES = 0.31, p = 0.01). As with the other subgroups, the magnitude of effects is similar or more positive on the student-specific DIBELS index than on the EOY DIBELS Composite.

Student Growth

To further explore the potential mechanisms behind these findings, the research team conducted additional growth analyses that leverage the vertical equating of BOY and EOY DIBELS Composite scores. As shown in Table 7, based on the Ed Corps pre-specified guidelines for low, medium, and high dosage, students who received fewer than 9 hours of tutoring saw a 124.7-point increase (34.3 SD) in their DIBELS Composite scores. Students receiving medium dosage (10-14.9 hours) and high dosage (> 15 hours) experience more growth, but the difference was not statistically significant. The second column uses re-calculated dosage thresholds that account for tutoring being offered over two full semesters for all treatment group students. Even

with these redefined dosage thresholds, students in the low dosage category saw 124.4-point increase in their DIBELS Composite scores from the beginning to the end of the year. Students in the medium dosage and high dosage groups saw slightly more growth, but the differences are not statistically significant.

Discussion

This study found that Ed Corps tutoring improved early literacy skills on both targeted and broader measures of reading. Students assigned to receive tutoring scored 0.15 SD higher on their end of year benchmarking assessment and 0.18 SD higher on a subset of specific skills that the intervention was likely to focus on for them. These findings suggest that while the skill-building sufficiently targeted the appropriate deficits identified for students, improvements were not limited to these domains. This is further supported by the exploratory analysis among third graders with state assessment data. While the point estimate was not statistically significant on the substantially smaller sample, the point estimate (0.13 SD) is consistent with an intervention that provides participants with both targeted improvement as well as far transfer to more comprehensive measures of reading.

While these findings are similar in magnitude to some other studies of small-group early literacy tutoring at scale (see Table 8 in Kraft et al., 2024), other recent evidence has found that tutoring with materials aligned to students' Tier 1 curriculum may be more effective than other programming. For example, a recent evaluation of TN Score found that being assigned to receive tutoring with aligned materials improved reading skills by 0.10 SD, compared with a control group that also received tutoring, but without aligned materials (Shakeel & Jackson, 2025). Given that the mClass intervention materials were aligned with the mClass-based Tier 1 literacy instruction in participating sites, we might have expected to find larger effects.

Moreover, it is somewhat surprising that effects seem to be concentrated among boys (ES = 0.33, p<0.01) relative to girls (ES = 0.01, ns), even if this difference is not statistically significant. Recently, a similar pattern has been found in other studies of elementary literacy tutoring. In the case of Ed Corps, it does not seem that this difference is a result of differences within tutoring sessions. As shown in Appendix Table A1, boys and girls showed similar amounts of tutoring (18 hours), rates of engagement, and rates of skill progression across sessions. Moreover, most students attended mixed-gender sessions. Instead, as shown in the first panel, girls in the control group experienced significantly more growth in their DIBELS Composite scores over the course of the school year than the boys, suggesting that girls may benefit more than boys in typical Tier 1 instruction.

Another interesting feature of the findings presented here is that Ed Corps tutoring effectiveness did not appear to increase with additional dosage. After dividing the schools into three even terciles, the largest positive impacts (0.38 SD, p<.01) were observed among the schools with the lowest average dosage. Effects for the other terciles were positive, but not significant. Moreover, analyses on reading skills measured at the middle-of-year benchmark point found that Ed Corps tutoring increased reading skills by a similar amount (see Appendix Table A2), suggesting that the second semester of dosage may not have been necessary to achieve the impacts found in the confirmatory analysis.

Overall, this study provides promising evidence for the Education Corps district partnership model. Ed Corps successfully recruited and trained enough tutors to provide services over the course of the study; this included efficiently replacing two tutors that resigned unexpectedly in the middle of the year. The program's success at developing a strong tutoring corps is also reflected in the fact that 76% of tutors had previously tutored with Ed Corps.

Moreover, we found no evidence of differences in the effectiveness of schools where tutors were prior educators and not, suggesting that the training provided by Ed Corps sufficiently prepared tutors from a variety of backgrounds to effectively support student literacy gains. Implementation was also strong across the board: dosage and attendance were high, as were ratings of student engagement. Finally, the choice of tutoring curriculum (mClass intervention) was both aligned with Tier 1 instruction and of sufficient quality to improve both specific and a broader set earlier literacy skills.

Conclusion

Given the available evidence, this study provides promising evidence for the effectiveness of the Ed Corps tutoring model to support literacy skills for struggling elementary readers. At the same time, there are some limitations. This study was not designed to measure aspects of the district-partnership beyond the implementation of high-impact tutoring and perceptions that district and school staff have of the Ed Corps program. Without this, it is hard to say whether the investment in this component is worthwhile. Relatedly, we did not conduct a formal cost study to measure the total costs or the cost-effectiveness of the Ed Corps tutoring. Given the variety of effective early literacy tutoring programs currently available, this information will be crucial for schools and districts when choosing their preferred approach to supporting struggling readers. Additionally, so far, Ed Corps tutoring has been exclusively implemented across the state of North Carolina, which has a fairly centralized approach to literacy instruction. More research would highlight how scalable the model is in other contexts, including communities with more variability in Tier 1 instruction.

Table 1

Observable baseline characteristics of treatment and control group students

Baseline characteristic	Treatment group		Control group		Difference	P value
	n	%	*n*	%		
Female	168	54	302	54	-0.01	0.74
Race/Ethnicity						
Black/African American	128	41	244	44	-0.03	0.51
Hispanic	122	39	216	39	0.00	0.99
White	34	11	50	9	0.03	0.19
Two or more	19	6	28	5	0.01	0.72
Asian & Hawaiian/Pacific Islander	9	3	17	3	-0.01	0.6
Limited English Proficiency	86	28	174	31	-0.02	0.47
Exceptional Children	43	14	91	16	-0.02	0.43
BOY Composite Score	314.36		308.25		0.83	0.28
Students by grade level						
Kindergarten	28	9	109	20		
Grade 1	100	32	180	32		
Grade 2	104	33	174	31		
Grade 3	80	26	92	17		

Sample	312	555

Note. The test of difference includes school-by-grade fixed effects, and the standard errors are clustered at school-by-grade level.

Table 2

Tutor descriptions

Characteristics	n	%
Highest level of education [a]		
Master	8	47
Bachelor	6	35
High school or equivalent	2	12
Current/former/retired educator	9	53
Returning Ed Corps member	13	76
Tutored for complete school year	13	76
Sample size	17	

Note. [a] This does not include one tutor whose highest level of education is unknown.

Table 3

Overview of implementation for treatment group students

Implementation feature	Average (sd)	Grade K (n = 25)	Grade 1 (n = 88)	Grade 2 (n = 90)	Grade 3 (n = 62)
Attendance					
N sessions offered to a student	49.6	48.3	49.5	52.9	45.7
N sessions attended	42.5	39.3	41.5	47.3	38
	(20.9)	(25.0)	(22.3)	(18.5)	(19.3)
% of sessions attended	84.3%	77.6%	82.6%	87.7%	84.6%
Tutoring hours	21.2	19.7	20.8	23.7	19
Class size					
Number of students in their attended sessions	3.1	2.9	3	3.3	2.8
Rating					
Engagement	93.9%	93.9%	93.3%	94.7%	93.6%
Skill progression	27.9%	44.4%	19.9%	27.7%	33.3%
Skills					
Number of skills covered per session	2.2	2.4	2.2	2.2	2.1
% sessions covering the most frequent primary skill	43.9%	56.2%	45.6%	37.7%	46.3%
Tutors					
Number of tutors seen	1.2	1	1.2	1.1	1.2

% sessions with a current/former/retired educator	52.2%	44.2%	51.9%	51.0%	57.2%
Sample size[a]	265				

Note. [a]This excludes 47 students in the treatment group whose data is not included in Littera.

Table 4

Primary impacts of Ed Corp tutoring on literacy skills (Full sample & G3 EOG)

	Control group	Treatment group	Difference	SE	Impact effect size	P value	Sample size
EOY DIBELS composite	434.1	437.8	3.77*	1.73	0.15	0.04	830
Student-specific DIBELS index	-0.21	-0.05	0.16*	0.07	0.18	0.03	826
Grade 3 End-of-Grade test	534.6	535.7	1.01	1.1	0.13	0.39	163

Note. SE=standard error; EOY=end of year. Standard errors are clustered at strata. Covariates include gender, race, LEP, EC status, strata fixed effects, BOY score, and missing indicator of BOY score. Statistical significance levels are indicated as: *=p<0.05, **=p<0.01, ***=p<0.001.

Table 5

Student subgroup analysis of primary impacts

	EOY DIBELS composite			Student-specific DIBELS index	
Subgroup	Sample size	Impact effect size	P value	Impact effect size	P value
Race					
Black	355	0.1	0.37	0.11	0.35
Hispanic	323	0.18	0.06	0.29**	0.007
White	83	0.24	0.5	0.11	0.66
Gender					
Boys	379	0.33**	0.003	0.35**	0.001
Girls	451	-0.02	0.85	0.02	0.85
English learner (EL) status					
EL	251	0.08	0.40	0.22	0.054
Non-EL	579	0.13	0.14	0.14	0.15
Exceptional children (EC) status					
EC	131	0.12	0.61	0.02	0.93
Non-EC	699	0.14	0.10	0.18	0.051
Grade level					
Kindergarten	129	0.37	0.15	0.41	0.20
Grade 1	271	0.20	0.10	0.06	0.63

Grade 2	265	0.01	0.84	0.07	0.62
Grade 3	165	0.10	0.62	0.29	0.14

Note. EOY=end of year. Four students with DIBELS Composite Scores did not have sufficient data to calculate a Student-specific DIBELS Index. Standard errors are clustered at strata. Statistical significance levels are indicated as: *=p<0.05, **=p<0.01, ***=p<0.001.

Table 6

School/contextual subgroup analysis of primary impacts

	EOY DIBELS composite			Student-specific DIBELS index	
Subgroup	Sample size	Impact effect size	P value	Impact effect size	P value
AY 2024-25 student attendance					
< 10% absent	546	0.21*	0.02	0.23	0.0503
>=10% absent	284	-0.01	0.93	0.08	0.55
School-level tutor type					
All former educators	286	0.17	0.13	0.13	0.31
Some former educators	321	0.11	0.29	0.19	0.16
No former educators	223	0.22	0.28	0.24	0.28
School-level average dosage[a] per student					
High	290	0.11	0.33	0.20	0.22
Moderate	285	0.003	0.97	0.02	0.88
Low	255	0.38*	0.03	0.32*	0.03

Note. Four students did not have sufficient data to calculate the Student-specific DIBELS Index, so subgroup numbers might differ slightly across outcomes.

[a]The school-level average dosage is defined as evenly splitting the nine participating schools into three sized groups based on the average dosage students received in each school.

Table 7

Treatment group student growth regression analysis

Change in DIBELS composite score from BOY to EOY	Pre-specified dosage[a]		Two-semester dosage[b]	
	Estimate	*SE*	Estimate	*SE*
Dosage[c]				
Medium	9.43	6.07	1.2	3.36
High	4.6	4.78	6.69	8.43
Sample size	299		299	

Note.

[a]Pre-specified dosage is defined as follows: low dosage is <9 hours, medium dosage is 9-14.99 hours, and high dosage is =>15 hours

[b]Two-semester dosage is defined as follows: low dosage is <18 hours, medium dosage is 18-30 hours, and high dosage is >30 hours.

[c]The reference group are students who received low dosage within the defined dosage range.

Appendix

Table A1

Exploring gender heterogeneity in treatment effects

	Control group student growth			
	Boys mean	Girls mean	Girls-Boy difference adjusted for Strata FE	P value
BOY Composite Score	308.3	308.2	1.04	0.14
Change in DIBELS composite score from BOY to EOY	122.3	128.1	4.47*	0.04
	Treatment group gender heterogeneity			
	Boys		Girls	
Summary of implementation	Mean	SD	Mean	SD
Session hours attended	18	12.3	18	12.2
Average engagement	0.92	0.2	0.95	0.1
Average skill progression	0.28	0.4	0.28	0.4
BOY Composite Score	310.1	19.6	310.7	19.5
	Session level		Student level	
Gender composition in sessions	N Sessions	%	N Students	%
100% all boys[a]	232	6	5	2
100% all girls[b]	659	16	25	9

Mix[c]	2976	73	229	83
Unknown[d]	222	5	6	2

Note.

[a]100% of their assigned sessions are all-boys sessions;

[b]100% of their assigned sessions are all-girls sessions.

[c]At least one of their assigned sessions is mixed-gender session.

[d]At least some of sessions include students not in our study sample (e.g. mid-year arrivals filling available slots), so we do not know the gender composition of the group.

Statistical significance levels are indicated as: *=p<0.05, **=p<0.01, ***=p<0.001.

Table A2

Impact of NCEC tutoring on literacy skills (MOY)

	Control group	Treatment group	Difference	Standard error	Impact effect size	P value	Sample size
MOY DIBELS composite	374.22	377.19	2.97*	1.34	0.17	<0.05	746

Note. Statistical significance levels are indicated as: *=p<0.05, **=p<0.01, ***=p<0.001.

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