

# An Evaluation of North Dakota K-3 Reading Corps

Impact Report

August  
2019



Prepared by the Center for Advancing Research to Practice  
at ServeMinnesota

Patrick Kaiser, M.Ed., Peter Nelson, Ph.D., and David Parker, Ph.D.

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## Executive Summary

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Launched in 2003, Reading Corps is an AmeriCorps program that places tutors (AmeriCorps members) in schools across the country to provide evidence-based literacy support to students from PreK to grade 3. The K-3 Reading Corps program, the focus of this evaluation, is delivered primarily in a 1:1 setting where tutors provide 20 minutes of daily support that is supplemental to the core instructional experiences of students. Reading Corps was introduced in North Dakota in 2013 and has since expanded to include 38 sites and 44 tutors serving over 600 students each year.

The primary purpose of the 2018-19 North Dakota K-3 Reading Corps evaluation was to assess the degree to which students assigned to Reading Corps in the West Fargo Public School district were more likely to demonstrate higher winter and spring literacy and reading scores relative to a similar group of students who did not participate in Reading Corps. A process assessment, which involved interviews with several types of program stakeholders, was also conducted to provide information for overall implementation and for context in interpreting the student literacy outcomes.

### Key Findings

**Process Assessment.** Interview respondents across all roles expressed clear support for the Reading Corps program. Internal Coaches, principals, teachers, and tutors observed the positive impact of the program and found it a valuable component of the school's supports for students.

In addition, the following themes were identified as essential considerations for implementing the program:

- Capable and dedicated Internal Coaches and tutors are essential to the program. Sites should select an Internal Coach who has the expertise, capacity, and commitment to the program and tutors must be dedicated to helping students with their literacy skills.
- Tutoring logistics can be a challenge at the beginning of the year but solutions can be identified to ensure program success. Interviews revealed creative solutions for finding a quiet and comfortable space for tutors to deliver the interventions. Establishing

the tutoring schedule is doable but can be time consuming for all roles.

- Training is an essential component of the Reading Corps model for both tutors and Internal Coaches, though the structure of the training can be overwhelming, particularly for new tutors. While returning tutors and Internal Coaches found trainings to be a useful review, a separate or reduced track may be more efficient.
- Communication between all roles is important for program success, particularly at the beginning of the school year. Teachers, in particular, would like to know more about the program and the interventions their students are receiving.
- Based on interviews from multiple sources and sites, the Reading Corps program appears to be implemented with high fidelity in West Fargo Public Schools.

**Impact Assessment.** To measure the impact of participating in Reading Corps, the research team analyzed student literacy outcomes from students at 12 schools in

the West Fargo Public School district. A total of 99 students participated in the Reading Corps program at these schools, and to evaluate the impact of the program these students were matched with 99 comparable students in the same district. The matching process used a quasi-experimental approach in which propensity score matching was used to identify students who were similar on a variety of demographic and achievement measures in the fall to the students participating in Reading Corps. The comparison group of students were restricted from receiving Reading Corps support during the fall semester but were allowed to receive Reading Corps support in the spring semester; however, only two students from the comparison group received Reading Corps support in the spring. For the winter analysis, students assigned to Reading Corps received 14.39 weeks of service and approximately 65 minutes of support each week. For the spring analysis, students assigned to Reading Corps received an average of 20.44 weeks of service and approximately 65 minutes of support each week.

Student literacy outcomes were analyzed on a variety of measures collected by West Fargo Public Schools. Data were available for the following measures: FastBridge earlyReading composite scores (Kindergarten and first grade), STAR Early Literacy scores (Kindergarten and first grade), oral reading fluency (first grade), and STAR Reading (second and third grade). Results for Kindergarten and first grade revealed no significant effects, indicating Reading Corps was not associated with improved outcomes on FastBridge earlyReading or STAR Early Literacy in either the winter or the spring. However, when examining outcomes adopted in previous Reading Corps research—

information not available for comparison students in the present evaluation—the rates of growth among kindergarten students (letter sounds) and first grade students (NWF and CBM-R) were as high or higher than growth rates observed for treatment students in previous research. The impact of group assignment was both positive and statistically significant for second and third grade students on STAR Reading. More specifically, assignment to Reading Corps was associated with a 41.27 scaled score increase in winter STAR Reading scores ( $d = 0.36$ ), and with a 62.13 scaled score increase in spring STAR Reading scores ( $d = 0.50$ ).

## Conclusion and Discussion

To date, there have been three large-scale randomized control trials of Reading Corps (Markovitz et al., 2014; 2018a; 2018b). Those evaluations provide strong evidence for the impact of Reading Corps on the most proximal outcomes of interest - the letter sound skills of Kindergarten students, the nonsense word fluency of first grade students, and the oral reading fluency of second and third grade students. However, those evaluations were conducted outside of North Dakota and did not include more distal measures of students' literacy skills.

The current findings extend the evidence base for Reading Corps in significant ways. The most striking finding was the large effect of Reading Corps on the STAR Reading performance of second and third grade students at winter post-test and spring post-test. Assignment to Reading Corps was associated with a predicted increase of roughly 41 points in the winter and 62 points in the spring compared to comparison students who did not receive Reading Corps support. For the typical student, the average STAR Reading weekly

growth for second grade students ranges from 2.2 to 3.5 scaled score points. Among third grade students the average weekly growth ranges from 2.9-3.3 scaled score points (Renaissance Learning, 2014). These typical weekly growth estimates are a useful reference when interpreting the unstandardized effects. For example, the spring effect of 62 scaled score points translates into approximately 17.71 weeks of additional instructional time on the low end and 28.18 weeks on the high end. In other words, the impact of Reading Corps among second and third grade students was equivalent to an *additional* half to three-quarters of a year's worth of academic instructional time. This is a very meaningful effect on a broad-based reading assessment that comprehensively covers literacy skills beyond those addressed in Reading Corps interventions and in previous Reading Corps evaluations.

Despite promising results among second and third grade students, no statistically significant effects were observed among Kindergarten and first grade students on the FastBridge earlyReading composite score, STAR Early Literacy, or oral reading fluency. It is useful to note that all three outcomes represent somewhat distal outcomes for students in those grades. The earlyReading and Early Literacy scores are obtained from broader assessment of early reading skills whereas Reading Corps focuses primarily on letter sounds (Kindergarten) and nonsense word reading (first grade). Prior research examining the impact of Reading Corps on letter sounds and nonsense words provides strong and convincing evidence that Reading Corps improves these subskills (Markovitz et al., 2014; 2018a; 2018b), and comparing results from the present study to those evaluations

shows students in North Dakota outperformed those comparison groups on these skills. This finding lends some support to the current activities for Kindergarten and first grade students.

For second and third graders, participating in Reading Corps was equivalent to an **additional half to three-quarters of a year's worth of instruction.**

There is potential value for Reading Corps in the null results in Kindergarten and first grade. One

explanation in light of the current findings across grades is that “transfer” of essential, but rather narrow, foundational literacy skills like letter sounds (as occurs in Kindergarten) may be less likely for younger students. However, it is also important to consider that there may be some benefit to an expanded approach to supporting students to improve a broader set of literacy skills. Using Kindergarten to illustrate, letter sounds—despite being a major component of early literacy growth—are one of many subskills involved in overall literacy proficiency for Kindergarten. It may be worth considering a broader approach to intervention that includes additional subskills. Thus, future research may be useful to refine the activities in a manner that might be expected to produce stronger results on the distal outcomes examined in the current evaluation.

The overall body of evidence for Reading Corps identifies a clear benefit for students. The current findings provide compelling evidence that the benefit extends to broader reading skills, at least among second and third grade students, as predicted by theories of reading development (see Gough & Tunmer, 1986). Combined with the broad support expressed by stakeholders, the Reading Corps program appears to be providing a valuable benefit to students in West Fargo Public Schools.



## Introduction

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### Reading Corps Overview

Launched in 2003, Reading Corps is an AmeriCorps program that places tutors (AmeriCorps members) in schools across the country to provide evidence-based literacy support to students from PreK to grade 3. The theory of change underlying Reading Corps is that providing AmeriCorps service and support to help schools meet the literacy needs of students will result in increased rates of literacy skills for children age 3 to grade 3. Over the course of a three day Institute, Reading Corps trains tutors in a series of empirically supported literacy interventions aligned with the National Reading Panel's Big Five areas of reading instruction: phonological awareness, phonics, fluency, vocabulary, and comprehension.

Once tutors arrive at their school, they are supported through a multi-faceted coaching model in which a school or district employee—referred to as an Internal Coach—provides day-to-day support on implementation, and a program coach—referred to as a Master Coach—provides content- and program-related support. The K-3 Reading Corps program is delivered primarily in a 1:1 setting where tutors provide 20 minutes of daily support that is supplemental to the core instructional experiences of students. Participating students are provided with books and other literacy activities to engage with in the home setting.

In addition to training and coaching on the delivery of literacy interventions, Reading Corps tutors and coaches are trained to regularly use data to make decisions about which students to support and when to modify that support. All students

participating in the Reading Corps program must demonstrate a need for additional support—defined as literacy performance below grade-level expectations. Further, Reading Corps tutors monitor the progress of students in the program using brief (~ 1 minute) weekly assessments of student performance. Those data are stored and displayed in a secure data management system accessible by tutors and coaches. For a detailed overview of the Reading Corps program, please see Markovitz et al. (2014).

Reading Corps was introduced in North Dakota in 2013 and has since expanded to include 38 sites and 44 tutors serving over 600 students each year. The implementation of Reading Corps in North Dakota is managed by the South East Education Cooperative, one of eight regional education associations in North Dakota.

### About the Study

The purpose of the 2018-19 North Dakota K-3 Reading Corps evaluation was twofold. The primary purpose of the evaluation was to assess the degree to which students assigned to Reading Corps in the West Fargo Public School district were more likely to demonstrate higher winter literacy and reading scores relative to a similar group of students who did not participate in Reading Corps. Previous research provides evidence for the impact of Reading Corps across a variety of contexts (Markovitz et al, 2014; 2018a; 2018b); however, data on the impact of Reading Corps in the state of North Dakota were unavailable. Thus, the South East Education Cooperative—the administrative unit for North Dakota Reading Corps—commissioned

an evaluation of Reading Corps in the West Fargo area. One additional benefit of the current evaluation relative to previous research on Reading Corps is the use of STAR Reading, which is a more distal measure of reading achievement when compared to the literacy measures adopted by the Reading Corps program. The results for the impact evaluation are separated by outcome, grade (K-1 and 2-3), and season.

To supplement the impact evaluation, we conducted an abbreviated process assessment. The process assessment

included a subset of schools participating in the broader impact evaluation and is intended to provide both (1) insight into the implementation context for the evaluation and (2) more general feedback on the program from a variety of key stakeholders. Across the participating schools, the evaluation team conducted a series of interviews with Internal Coaches, principals, teachers, and tutors.

## Process Assessment

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As we note above, a subset of schools from the full impact evaluation ( $n = 5$ ) participated in a series of interviews related to the implementation of Reading Corps. In general, the schools participating in the process assessment were similar to the overall implementation environment across the 12 schools insofar as all schools were located in the West Fargo Public School district, served by a half-time tutor, and supported using the program's typical coaching structure. At each school, the evaluation team interviewed key stakeholders in the program and included the Internal Coach ( $n = 5$ ), principal ( $n = 4$ ), tutor ( $n = 5$ ), and teachers ( $n = 7$ ).

In most cases, interviews were conducted individually; however, teacher interviews were conducted in small groups at two of the five schools. All interviews were anonymous. The interview forms differed somewhat across each type of respondent; however, the same record forms were used for each type of respondent. Copies of each interview form are included in Appendix A. In general, interview forms focused on the following topics: the manner in which students were selected and scheduled for Reading Corps, training, intervention procedures, characteristics of effective implementation, and the degree to which Reading Corps aligned with the broad goal of supplemental support within the school. Finally, all respondents were asked to evaluate Reading Corps more broadly (e.g., the program's perceived value, strengths, and areas for improvement). Results from the process assessment interviews are arranged below by respondent.

### Internal Coach Interviews

As previously described, the support structure for Reading Corps is multi-faceted. Tutors are supported on-site by Internal Coaches who participate in Reading Corps training and off-site by content experts ("Master Coaches"). Internal Coach duties include a wide range of "on the ground" support such as student selection and scheduling, parent communication, teacher communication, tutor observations, and general help with integrating the tutor into the school.

*Internal Coach background.* The Internal Coaches across the five selected sites were all female and tended to have between two and five years of experience working as an Internal Coach. All of the Internal Coaches had some previous teaching experience; however, no Internal Coach was currently operating as a core instruction teacher. Four of the five Internal Coaches were full-time employees and one coach was employed at .65 FTE. Two Internal Coaches were currently employed as instructional coaches within the district and were tasked with providing direct support to teachers and other professionals in the school (e.g., modeling lessons, teacher observations, aligning curriculum with instruction). Two Internal Coaches provided direct instruction as reading specialists, including small-group support for students who are below grade-level expectations. Finally, one Internal Coach was employed as the dean of students and was primarily responsible for any student or parent issues arising within the school.

*Student selection and scheduling.* All five Internal Coaches tended to use the same approach to student selection. West Fargo

Public Schools recently adopted FastBridge and STAR Reading district-wide as a method for universal screening and progress monitoring. Following universal screening in the fall, Internal Coaches reviewed the list of students who were below benchmark and then prioritized students who were close to, but below the benchmark. Given the limited capacity of half-time tutors, there were generally no problems in identifying an appropriate pool of students for Reading Corps. All but one of the Internal Coaches expressed that the approach to student identification was ideal. One Internal Coach indicated that she sometimes selected students who were further from the benchmark if those students did not have access to other support within the school.

With the exception of one Internal Coach, all coaches indicated that students were typically scheduled within an instructional enrichment (IE) time during the day. IE time was available across all schools and was used by a number of support programs to deliver supplemental intervention. One Internal Coach indicated that core instructional time—including time dedicated to reading—was occasionally used for supplemental reading support. Scheduling was seen as a difficult project for most Internal Coaches, primarily due to the limited window for scheduling intervention time and the fact that tutors were generally not present for the entire school day.

#### *Reading Corps role within the school.*

Although it was clear from the interviews that Reading Corps was a critical component of the school's approach to supporting the reading skills of students, it was less apparent how the program was viewed by Internal Coaches from a systems perspective. To illustrate, all Internal

Coaches reported some form of support for students who had very low performance on the universal screening assessments. For example, in schools with access to Title I support, a program called Read Well was provided to students below the 25<sup>th</sup> percentile (generally). In all but one school, Read Well was delivered in addition to core instruction and consisted of 60-80 minutes of weekly instruction delivered in small groups. When Read Well was not available, a reading specialist within the school supported those students in small groups for a similar amount of time. Both Read Well and support from reading specialists were clearly discussed at the system level—both programs were plugged into the overall “pathways of support” plan for students at the school level. By contrast, Reading Corps was characterized differently, as a form of differentiated grouping or other form of support that might deviate slightly from the support that all students received in core instruction. That is, Reading Corps was not called out specifically by name in charts that mapped out the support students might have access to. Nevertheless, Internal Coaches did share that most people in the school were aware that Reading Corps existed as a support for students and that most people generally viewed the program as meeting a clear need along the support continuum.

*General Feedback on the Reading Corps program.* In addition to information about the day-to-day implementation of Reading Corps during the impact study, Internal Coaches were asked to reflect on the school's perception of the program, as well as their thoughts on a variety of program characteristics. This feedback is outlined below and arranged by relevant categories.

**Training.** Overall, Internal Coaches found the training to be useful insofar as they appreciated the thoroughness of the content and recognized that tutors needed the training to get up and running. Yet all five Internal Coaches noted that the training can be overwhelming. A major theme in regard to training related to a perceived need to both streamline the training and re-focus on materials that are connected to the “on the ground” needs of tutors. Coaches indicated that the training covers a large amount of content over a short period and that some of the content is not immediately relevant. As a result, tutors were perceived to be under a lot of stress, and at times “key pieces” of the program could be lost among the full spectrum of content. Further, the training was perceived as unnecessary for some returning tutors. The coaches shared some suggestions for improvement, such as an abbreviated and spread out approach to training in which content is covered during the time that it is most relevant. Others suggested that the Reading Corps handbook itself was overly complicated and that smaller packages of materials (e.g., the K-3 standard assessment instructions) were much easier to interpret and use in practice. Likewise, multiple Internal Coaches called out online materials as helpful and suggested that the training better emphasize the use of those resources. Somewhat in contrast to these suggestions, one Internal Coach indicated that it may be helpful for coaches to attend more trainings with the tutor, which may offer the opportunity for better overall understanding at the school.

**Content and delivery.** A majority of Internal Coaches indicated that the content and delivery of Reading Corps was effective, aligned with the core curriculum, and appropriately targeted.

However, all Internal Coaches indicated that a fundamental factor in program success was the quality of the tutor. One content-related critique that arose was related to aligning assessment with intervention in first grade. The program currently uses nonsense word fluency in the fall but provides intervention using real decodable words. The interventions for first grade and Kindergarten were also highlighted as monotonous, which introduced challenges in implementation during the year. Internal Coaches offered a suggestion to allow modifications to those interventions or introduce alternatives. Finally, two suggestions for additional content were provided—one for writing and one for math.

**Communication.** Communication was the most consistent point of feedback from Internal Coaches. Most Internal Coaches indicated that they worked hard to communicate about the program, but the strategies for communication varied. All coaches indicated that while teachers and staff supported Reading Corps, very few would be able to describe what students do when working with tutors. This was generally seen as a potential barrier for achieving maximum program impact. Internal Coaches offered some suggestions for improving communication. Beginning with training, coaches suggested that materials about communication (for parents and teachers) could be packaged together in the same way that materials for assessment are packaged together. This was seen as one way to ensure consistency across sites. In addition, coaches suggested that those materials be clear and presented in a plain fashion. Overall, Internal Coaches tended to agree that all teachers and parents should know (1) what Reading Corps is, (2) how students qualify for Reading Corps, and (3) how students

are doing across time. In addition to guidance on how to introduce and communicate about the program, some Internal Coaches suggested that tutors find a way to talk with teachers about their students throughout the year—either by monthly meetings or “office hours” that the tutor might hold each week.

**Overall Perception.** Overwhelmingly, Internal Coaches indicated that they viewed the program as a major benefit to students. With one exception, Internal Coaches felt that tutors were seen as a part of the school community. Coaches felt that the program “worked” and they used students’ data as a reference for that assertion. Coaches generally felt that the program was currently being implemented in accordance with expectations and that implementation would lead to good results. Largely because of the perceived benefits of the program, four of the five Internal Coaches indicated that they would recommend the program to their colleagues without any reservations. One coach was supportive of the program, but indicated that it would only be a fit for schools that have a clear need and a capacity to support implementation. Because coaches must make time for observations and other forms of tutor-support, some coaches expressed that it can be difficult to balance those responsibilities with their typical duties. Thus, the concept of Internal Coach “fit” for the position appears to be a useful reference as the frequency and quality of tutor support might be expected to influence program outcomes.

## Principal Interviews

**Principal background.** Principals from four schools were interviewed a part of the process assessment and had been in their schools for four to seven years, in which

Reading Corps was present every year. Some schools were eligible for Title 1 supports and others were not as based on student demographic characteristics. All principals continued to apply for Reading Corps services because they recognized and appreciated how the program provides a service for at-risk students who too often go without additional support.

**Implementation logistics.** No principals reported needing to change any policies or procedure to accommodate the Reading Corps program, but each cited logistical adjustments and challenges. They reported needing to find workarounds to ensure the Reading Corps tutor could access a computer, and also noted that identifying space for tutoring required creative solutions. All reported these challenges were overcome. Another logistical challenge related to scheduling. Although each principal reported their schools created effective schedules, two reported a need to spend time problem solving to make sure Reading Corps tutoring fit within the daily schedule.

**Implementation personnel.** Principals provided multiple thoughts regarding the personnel required to implement Reading Corps. In the current year (2018-2019) all principals reported that the Reading Corps program was well-implemented, that school staff had welcomed and supported the tutor, and that their Internal Coach was playing a key role in the year’s success. Each expressed the importance of having strong and committed Internal Coaches *and* tutors. Principals shared that when either the Internal Coach or tutor is not clear about the role, committed to it, or able to work flexibly implementation can be a challenge. Multiple principals also noted that communication is critical, especially earlier in the school year. They



noted that Internal Coaches and tutors must communicate well among themselves, with the principal, and with the school staff. Increased communication with school staff was noted as a need at the beginning of the school year.

All principals stated that it is especially important to have a tutor who is a good fit with the school, and that the individual serving as the tutor must have (a) a passion and dedication to children and (b) the ability to manage the logistical tasks of the position (e.g., working out flexible schedules; attending trainings; preparing the paperwork/materials for tutoring).

In addition to personnel at their schools, each principal recognized the value of the central Reading Corps administration. This generally took two forms. Principals appreciated knowing their district contact was available and accessible for support if issues arose (and felt the central administration was effective). They also expressed appreciation for the training and coaching structure that Reading Corps administration provides.

**System integration.** In contrast to Internal Coach reports, each principal explicitly recognized and reported that the Reading Corps program fit well within their schools' systemic efforts to support their students. They described this fit in two general ways. First, they talked about how the Reading Corps program fit within the schools' PLC structure (grade-level teams that discuss student needs and what supports can be provided). The Reading Corps services were considered one of the schools' options available for PLC teams to discuss. The other way Reading Corps was described as fitting within school systems was as a multi-tiered system of support (MTSS) approach, in which data-teams met and

discussed students who were eligible for—or were already receiving—Reading Corps. These two approaches were described separately, but did not appear necessarily distinctive; in fact they may have functioned in a similar fashion.

Principals also noted appreciation for the data provided by Reading Corps, which they noted often in the context of the above-mentioned PLC/MTSS processes. Each principal explained they were aware of the student data that Reading Corps produces, and that they'd either (a) met frequently with Internal Coaches and/or tutors to review and discuss it on an individual student basis, or (b) knew exactly how to access such data should they need to.

**Overall perception.** Overall, each principal expressed strong satisfaction with Reading Corps, with one principal stating “it’s critical that we have this position.” Another principal did mention that satisfaction was largely based on the quality of the tutor in the building. They all reported that they would recommend the program to colleagues, citing the fact that the program improves student outcomes as the main reason. Principals also offered helpful feedback regarding what they have learned while implementing the program. These thoughts centered on (a) finding the right person for the roles in the program (i.e., finding the right Internal Coach within their building), and (b) ensuring sufficient and effective communication occurs, particularly at the beginning of the school year. Additional ideas for changes/improvements to the program included (1) improved parent communication (e.g., ongoing student progress), (2) knowing more information about the program’s overall impact, (3) being able to compensate the tutors more

or hire tutors full-time, (4) adding a focus on comprehension skills for older students, and (5) allowing the Internal Coach to follow a different training track after their initial training was completed.

## Teacher Interviews

**Teacher background.** Teachers from three schools were interviewed about their perspectives on the Reading Corps program. Three teachers were interviewed in a focus group setting at the first school, two teachers were interviewed in a focus group at the second school, and at the third school scheduling required the two teachers to be interviewed separately. Teacher experience at the schools ranged from 1 to 34 years.

**Implementation logistics.** Teachers identified tutoring schedules as the one accommodation they needed for Reading Corps. For four teachers, their students receive tutoring during their enrichment block, making it a relatively easy accommodation. The other three teachers said they need to ensure students do not miss any core curriculum while receiving their tutoring. Teachers reported that most students are excited for their Reading Corps tutoring so the student transition to tutoring was not seen as a challenge. One teacher shared that the time of day can impact if a student wants to go tutoring and provided the example of a student who did not want to go to tutoring because it was during their snack time.

**Reading Corps role within the school.** Teachers reported awareness that Reading Corps fits well within their school's broader system of support for students and complements core curriculum. Other support options available at the schools include the Read Well program for students below the 25<sup>th</sup> percentile and EL services.

One teacher expressed support for more students receiving Reading Corps tutoring and interest in a similar program to support students in math. With the time and value Reading Corps tutors are providing to students, teachers see their school's tutor as part of the school staff.

**Communication.** All teachers have seen graphs of student progress. The frequency of the program sharing graphs with teachers ranged from once per month to once every few months. Once per month was generally expressed as the preferred amount of time between seeing student graphs. Some teachers shared they would like a more in depth overview or introduction at the beginning of the school year. Some also expressed interest in knowing more about the interventions being provided to their students, with a "newsletter" or regular emails offered as a suggestion. One teacher recommended that the tutor be introduced at a staff meeting where they could share an overview of the program. While the teachers were not directly asked about communication with families, one teacher recommended the program increase their contact with families and that this communication could come through each student's teacher.

**Overall perception.** Each teacher expressed overall support for the program. Their students are generally happy after tutoring and they can see the progress in their literacy skills. One teacher stated that "students I've seen are doing really, really well". Another shared that she has had students participate in the program since its first year and has never seen a student not make growth. In addition to gains in literacy skills targeted by the program, the teachers also see an increase in student confidence from participating in the program and that improvements transfer to



core curriculum activities. Most of the teachers would recommend the program to their colleagues within or outside their school, though a few said they didn't know enough about the program to confidently make this recommendation.

## Tutor Interviews

***Tutor background.*** Two of the interviewed tutors were in their first year as a Reading Corps tutor and three were in the second year. All tutors were female and had at least one child who was attending the school where they served. Three of the tutors were “stay-at-home” parents prior to joining the program and two were previously employed at the school as a paraprofessional. All of the tutors heard about the program from their child's school. Reasons for joining the program included transitioning back to work, having an interest in working with children, and preferring the role of a tutor as either a supplement or alternative to being paraprofessional at the school.

***Student selection and intervention delivery.*** Tutors stated that Internal Coaches took the lead with scheduling intervention timeslots for students. Two tutors mentioned that setting up the schedule was a challenge as only certain time blocks were available for each classroom. At one site, serving a lot of students in one grade made scheduling more challenging while at another site it was easier as the teacher for that grade was particularly flexible with the schedule. One tutor had to change the hours she served so she was at the site in the early afternoon when third grade students were available for tutoring. One tutor noted that the time of day tutoring occurred was important for some grades, noting that working with Kindergarten students later in

the day when they are tired was especially challenging.

All of the tutors delivered their tutoring in a private space. Two of the tutors were in small offices, two were in larger rooms that were mostly used for storing books, and one was in a classroom like space. All tutors were generally happy with their space and thought it was important to be somewhere with limited distractions.

For deciding which interventions to deliver to each student, the tutors in their second year with the program described intervention decisions as a collaborative process with the Internal Coach. For each student, the Internal Coach and tutor would go over the student's benchmarking and progress monitoring scores to identify the best intervention for their current skill level. One tutor said teachers were sometimes asked for their input. First year tutors said they were not involved in the intervention decisions as they were made solely by the Internal Coach with the support from the Master Coach.

When asked about each individual intervention, tutors commented that most interventions were effective and easy to deliver. A number of the early literacy interventions were described as “monotonous” and “boring” for both tutors and students, with many tutors noting the need to be creative with delivery and providing a lot of praise to keep students engaged. Great Leaps was frequently identified as the most challenging intervention to deliver, particularly its many parts which require a lot of organization.

***Training and coaching.*** All of the tutors described the three day training Institute at the beginning of the program year as

overwhelming for first year tutors, noting it caused an information overload and a high amount of stress. Returning tutors found their second experience with Institute to be a good review of the content and a less stressful experience. Tutors identified an increase in videos of tutors as a useful training tool for understanding their role. Two tutors mentioned talking to experienced tutors as a helpful part of Institute for first year tutors, with one recommending each new tutor be assigned a returning tutor as a mentor.

All five tutors said they were observed delivering interventions at least twice per month by their Internal Coach and once per month by their Master Coach. Tutors found the observations and coaching feedback to be useful for identifying ways to improve intervention delivery and behavior management, though one tutor found the observations to be “terrifying” but still helpful. Graph review meetings with coaches were also considered a useful part of the program.

**Communication with teachers.** The means and frequency of communication with teachers somewhat varied by site. Three of the tutors said their Internal Coach handles communication with teachers while two tutors, both in their second year of service, had more direct contact with teachers. Four tutors said student progress graphs were shared monthly while one said they are shared every two weeks. Parent-teacher conferences were also noted as a time when student graphs are often provided to teachers. Some Internal Coaches shared the student graphs with teachers through email while others printed the graphs to share. Teachers occasionally go directly to tutors with

questions on student performance. Three of the tutors were comfortable answering questions from teachers while one tutor said she directs questions to her Internal Coach.

Internal coaches, principals, teachers, and tutors find Reading Corps a valuable component of the school’s supports for students.

**Overall Perception.** Each tutor expressed confidence in Reading Corps improving students’ literacy skills because they see student growth in the data they collect. One tutor noted an increase in students confidence and attitude toward reading while another shared that students are often sad to graduate or exit from tutoring.

While all of the tutors had an overall positive view of the program, a few proposed some program changes. One tutor would like to be able to serve for longer than four years, the current AmeriCorps limit, and would also like to be able to serve at the school for the full school day. Two tutors would like more flexibility in the program in terms of intervention decisions and in the intervention scripts, hoping to better meet student needs and have the opportunity to be more “human”.

Three of the five tutors expressed a strong likelihood of serving as a tutor for another year. These tutors shared that the program works well with their schedule and that they enjoy working with the students. Two of these tutors are also considering going back to school to become teachers at the conclusion of their service. The two tutors who were unsure if they would serve an additional year were considering more full-time work.

## Interview Summary

Overall, interview respondents across all roles expressed support for Reading Corps.

Internal Coaches, principals, teachers, and tutors see the positive impact of the program and find it a valuable component of the school's supports for students. The following themes stood out as essential components of the program:

- Capable and dedicated Internal Coaches and tutors are essential to the program. Sites should select an Internal Coach who has the expertise, capacity, and commitment to the program and tutors must be dedicated to helping students with their literacy skills.
- Tutoring logistics can be a challenge at the beginning of the year but solutions can be identified to ensure program success. Interviews revealed creative solutions for finding a quiet and comfortable space for tutors to deliver the interventions. Establishing the tutoring schedule is doable but can be time consuming for all roles.
- Training is an essential component of the Reading Corps model for both

tutors and Internal Coaches, though the structure of the training can be overwhelming, particularly for new tutors. While returning tutors and Internal Coaches found trainings to be a useful review, a separate or reduced track may be more efficient.

- Communication between all roles is important for program success, particularly at the beginning of the school year. Teachers, in particular, would like to know more about the program and the interventions their students are receiving.
- Based on interviews from multiple sources and sites, the Reading Corps program appears to be implemented with high fidelity in West Fargo Public Schools.

## Impact Assessment

As previously described, the purpose of the impact assessment was to evaluate the degree to which the literacy and reading scores of students receiving Reading Corps were different from the scores of similar students not receiving Reading Corps support. Outcomes were obtained at two points in time (winter and spring). Five research questions guided the study:

1. To what extent do the earlyReading composite scores - as measured by FastBridge assessments - of Kindergarten and first grade students assigned to receive Reading Corps differ from those observed for similar students without access to Reading Corps?
2. To what extent do the Early Literacy scores - as measured by STAR Reading - of Kindergarten and first grade students assigned to receive Reading Corps differ from those observed for similar students without access to Reading Corps?
3. To what extent do the oral reading fluency scores of first grade students

assigned to receive Reading Corps differ from those observed for similar students without access to Reading Corps?

4. To what extent do the oral reading fluency scores of second and third students assigned to receive Reading Corps differ from those observed for similar students without access to Reading Corps?
5. To what extent do the STAR Reading scores of second and third grade students assigned to receive Reading Corps differ from those observed for similar students without access to Reading Corps?

From the above research questions, it follows that there were different outcomes of interest within and across grades. The outcomes of interest in each grade are displayed in Table 1 below. The reference section of this report includes citations that describe the technical qualities of these assessments.

**Table 1. Assessment Tools Used Within and Across Grades.**

Grade	earlyReading (FastBridge)	Early Literacy (STAR)	Reading (STAR)	CBM-R (FastBridge)
Kindergarten	✓	✓		
First Grade	✓	✓		✓
Second Grade			✓	✓
Third Grade			✓	✓

### Participants

A total of 12 schools in the West Fargo Public School district participated in the evaluation - each school was matched with one part-time Reading Corps tutor. In the

fall, each tutor served between seven and nine students for a total of 99 students. Those students were selected using the standard Reading Corps procedures. That is, all eligible students were (1) referred

for Reading Corps support and (2) scored below the grade-level fall benchmark on Reading Corps screening measures. Because random assignment was not possible in participating schools, we adopted a quasi-experimental approach to the evaluation in which students assigned to Reading Corps were matched with students who were similar on a variety of demographic and achievement measures in the fall. Those students - referred to throughout this section as the “comparison group” - were restricted from receiving Reading Corps support during the fall semester. Students in the comparison group were allowed to receive Reading Corps support in the spring semester; however, only two students from the comparison group received Reading Corps support in the spring. To retain the integrity of the original matching process, only students originally assigned to Reading Corps are considered in the impact evaluation. The matching procedures and the resulting analytic sample are outlined below.

**Propensity Score Matching.** The subset of students assigned to receive Reading Corps ( $n = 99$ ) made up only a small portion of the total number of students in the participating schools ( $N = 2,327$ ). To create a matched comparison group, we used propensity scores. Propensity matching is largely advocated as a valid and useful quasi-experimental method for evaluating group differences, as it is designed to balance groups across a number of pre-existing factors that could otherwise account for differences in the outcome measures (Smith, 1997; Stuart & Rubin, 2008).

In the current evaluation we used the MatchIt package in R to create a matched sample (Ho, Imai, King, & Stuart, 2011). The matching process included two analytic

steps. In the first step, logistic regression was used to calculate each students’ propensity (or likelihood) for treatment assignment. In other words, the propensity score represents the likelihood that a given student would be assigned to Reading Corps, based on a variety of information known about the student (e.g., fall literacy scores, gender, race, El status). The primary metric of success for propensity matching is the degree to which the matched sample corresponds to the treatment sample across key covariates.

When generating propensity scores, a larger number of covariates with varying associations with the outcome are generally preferred over a restricted number of covariates with more direct associations (Hill, Reiter, & Zanutto, 2004). To facilitate a successful matching process, we included students’ initial literacy score (either CBM-R or the early literacy composite), STAR Reading scores, and dummy coded variables for race, gender, special education status, English Learner status, and eligibility for free or reduced price lunch. We created separate files by grade to ensure propensity values were created within grade; however, to create an optimal match, propensity values were created across sites. That is, a student from School A could be matched to a student in School B, provided those students were in the same grade and had similar propensity score values. The resulting logistic regression model produced a value representing the propensity of a given student participating in Reading Corps.

The second analytic step involved matching cases according to their propensity scores, where students in the treatment group were matched with a student who did not receive the treatment but had a similar

propensity for receiving the treatment. In the present analysis we used nearest neighbor matching without replacement to pair cases based on their likelihood of participating in Reading Corps (Rubin, 1973). Comparison cases not matched to a treatment case were excluded from further analysis. Thus, the final sample consisted of 198 students (99 in treatment and 99 comparison students). Descriptive data for the analytic sample separated by group are included in Table 2. A series of chi-square and t-tests indicated that there were no statistically significant differences between groups in regard to grade, gender, race, English learner status, FRPL status, special education status, initial literacy score, or initial STAR score.

It is important to note that because matching was done *across* sites the number

of students selected for comparison at any given site was sometimes larger or smaller than the number of students receiving Reading Corps. The primary practical concern with this approach was to ensure sufficient students would be available at each site to maintain full use of tutors caseload capacity, which was relevant in cases in which treatment students exited (or graduated) from the program or moved away. To address this concern, the evaluation team reviewed the total number of eligible students at each site to ensure an adequate number of Reading Corps-eligible students were unassigned at each site to ensure the Reading Corps tutor's caseload would remain full. Again, wait list students were not included in the impact analysis.

**Table 2. Distribution of Analytic Sample at Pre-test**

Variables	Comparison (n = 99)		Reading Corps (n = 99)	
	M	SD	M	SD
<b>Fall Achievement</b>				
FAST Literacy Score <sup>a</sup>	47.32	30.42	45.53	23.69
STAR Score <sup>b</sup>	451.78	214.64	443.20	200.01
<b>Demographics</b>				
FRPL	.23	-	.23	-
EL	.04	-	.04	-
Special Education	.07	-	.05	-
Male	.44	-	.45	-
Kindergarten	.34	-	.34	-
First Grade	.26	-	.26	-
Second Grade	.19	-	.19	-
Third Grade	.20	-	.20	-
Asian	.02	-	.03	-
Black	.03	-	.03	-
Hispanic	.01	-	.01	-
Native	.03	-	.02	-
Pacific	.00	-	.01	-
White	.91	-	.90	-

*Note:* FRPL = Free or reduced price lunch; EL = English Learner. <sup>a</sup> Only students in Kindergarten and first grade are included in these means. <sup>b</sup> Only students in second and third grade are included in these means.



## Measures

All data were obtained from the West Fargo Public School district. The district uses multiple measures of student performance for each grade. All Kindergarten and first grade students complete the STAR Early Literacy assessment three times during the year (fall, winter, and spring). In addition, students in Kindergarten and first grade complete earlyReading assessments developed by FastBridge Learning (Christ et al., 2014). Those assessments are used to create a composite score (referred to as the earlyReading score throughout this report). First grade students also complete CBM-R in the winter and spring. Second and third grade students complete STAR Reading three times each year. Some - but not all - second and third grade students complete CBM-R. More specifically, only second and third grade students with a STAR Reading score at or below the 40<sup>th</sup> percentile complete CBM-R. Additional information on the assessments used in the present study is outlined below.

**FastBridge earlyReading.** There are a total of 12 subtests included as part of the earlyReading assessment; however, only four of those subtests are recommended at different benchmark periods during the year. In the fall, Kindergarten students complete subtests on Concepts of Print, Onset Sounds, Letter Names, and Letter Sounds. In the winter, students complete Onset Sounds, Letter Sounds, Word Segmenting, and Nonsense Words. In the spring, students complete Letter Sounds, Word Segmenting, Nonsense Words, and Sight Words (Christ et al., 2014). First grade students complete a slightly different array of subtests to generate the composite score. In the fall, students complete Word Segmenting, Nonsense Words, Sight Words, and Sentence Reading. In the winter and spring, first grade

students complete CBM-R in place of sentence reading. Internal consistency estimates across all subtests range from .74 to .99. Concurrent and predictive validity estimates between the earlyReading composite score and the GRADE (an untimed, group-administered, norm-reference reading achievement test) range from .67 to .68 among Kindergarten students and .72 to .83 among first grade students.

**CBM-R.** Students also completed CBM-R, with the number of words read correct in one minute as the primary metric of interest. Reported alternate form and internal consistency reliability estimates for grades one through three range from .62 to .86 and .89 to .91 respectively (Christ et al., 2014). Fall to spring test-retest reliability estimates range from .88 to .94. Concurrent validity estimates with the Test of Silent Reading Efficiency and Comprehension in grades one through three range from .81 to .86. Predictive validity estimates with the Measures of Academic Progress range from .73 to .76 in grades two and three.

**STAR Reading and Early Literacy.** STAR Early Literacy and STAR Reading are computer adaptive tests of reaching achievement. STAR Reading is vertically scaled and available for students in grades one through twelve, with scaled scores ranging from 0-1400. Split half reliability for STAR Reading is equal to .92. In a meta-analysis that included 223 correlations with other tests, the publishers of STAR Reading report average correlations between .75 and .77 for grades 1-3 (Renaissance Learning, 2016). STAR Early Literacy is structured similarly; however, it was designed explicitly for use with students in Kindergarten through second grade. Scaled scores on STAR Early Literacy range from

300 to 900. Split-half reliability estimates for STAR Early Literacy range from .75 in Kindergarten to .82 in second grade. The publishers adopted a similar meta-analysis methodology to summarize 63 correlations observed between STAR Early Literacy and other measures of reading achievement. Those correlations range from .56 to .64.

## Implementation Procedures

All students selected to receive Reading Corps were supported using procedures identical to those outlined in previous evaluations of the program (e.g., Markovitz et al., 2014; 2018a; 2018b). By design, Reading Corps students receive daily evidence-based interventions for approximately 20 minutes per session. Those interventions are provided in addition to core instruction and target phonemic awareness, phonics, or reading fluency depending on student need. For a full description of Reading Corps intervention procedures please contact the authors of this report.

During the study, the experiences of students in Reading Corps tended to be relatively similar across sites insofar as all students began service in the fall of 2018. For the winter analysis, students assigned to Reading Corps received 14.39 weeks of service and approximately 65 minutes of support each week. For the spring analysis, students assigned to Reading Corps received an average of 20.44 weeks of service and approximately 65 minutes of support each week. In both the winter and spring analysis, the total amount of observed intervention time (65 minutes) was lower than the allocated time (100 minutes), due to short weeks, absences, and other factors that impact instructional time during typical school schedules. The observed number of weekly intervention minutes was generally commensurate with

previous research on the program. Roughly 37% of students in the comparison group received some form of intervention in addition to their core instructional experience during the school year. The most predominant type of support provided was characterized as Tier II intervention (32%), followed by special education in reading (3%), speech (1%), or EL instruction (1%). As we note in the process assessment subsection of this report, it is likely that the Tier II support was either (1) Read Well or (2) group-based intervention from a reading specialist.

## Analysis Procedures

To assess the five research questions of interest for the current evaluation, we fit a series of linear regression models to the data wherein the outcome of interest was regressed on group assignment controlling fall achievement. More complex models were evaluated that controlled for schools and various student demographic variables; however, those models (1) increased in complexity without an added benefit to explanatory power, and (2) did not alter the effect of group assignment across all outcomes. As a result, we adopted the more parsimonious approach to modeling.

*Winter missing data and attrition.* Across the fall semester, two of the 99 comparison students were provided with Reading Corps services despite guidance not to do so. All analyses were completed with and without those students. No changes were observed to the statistical significance or magnitude of effects. Post-test data were missing across multiple winter outcomes, albeit at different rates. The lowest rate of missing data was observed for CBM-R among first grade students (0%). Low rates of missing data were also observed for STAR Reading and STAR Early Literacy tests ( $n = 3$ ). These data were likely missing at random and



made up only 3% of the total number of cases. However, much higher rates of missing data were observed for CBM-R data among second and third grade students ( $n = 10$ ).

It is also important to note that all second and third grade students who were missing CBM-R winter data belonged to the comparison group. Thus, it is likely that those data were not missing at random. Further investigation regarding the reasons for missing data among that subgroup of students revealed that the district did not obtain the CBM-R performance of second and third grade students with scores above the 40<sup>th</sup> percentile on the fall STAR Reading test. Because the data for the present evaluation were provided directly by the district, it was not possible to obtain CBM-R data for those students. The missing data among second and third grade students in the comparison group was deemed to be especially problematic from an analytic perspective because the reason data were not available was directly related to the high level of competency among those students. The practical impact of those missing data was an overall lower average CBM-R score among comparison students, because by definition, their lower fall scores was the mechanism by which it was determined to assess them with CBM-R in the winter. For these reasons, we did not formally evaluate the CBM-R scores of second and third grade students in the winter.

*Spring missing data and attrition.* Across the spring semester, two of the remaining 97 comparison students were provided with Reading Corps services. Similar to the winter, analyses were completed with and without those students. No changes were observed to the statistical significance or magnitude of effects. Resulting models are

reported after excluding comparison students with service. A small number of cases were missing spring outcome data. The prevalence of missing data differed slightly across outcomes; however, rates of missing data were generally similar across groups. Eight of the 118 Kindergarten and first grade students were missing data on the FastBridge earlyReading assessment and one Kindergarten student was missing data on STAR Early Literacy. Three of 40 first grade students were missing CBM-R data. Finally, eight of 78 second and third grade students were missing spring STAR Reading data. As with the winter data collection, CBM-R data were unavailable for a specific set of students assigned to the comparison group. For the same reasons outlined above, CBM-R data were not included as an outcome for the regression models.

## Impact Analysis Results

Results for the impact analysis are grouped by level of inference and research questions. First, we present descriptive data across outcomes split by grade and treatment group. These data are followed by the results from the regression models detailed on page 30 and 31.

*Descriptive.* Descriptive data are displayed in Table 3 below. STAR scores increased across time for all grades and across both the treatment and comparison group. With the exception of first grade, slightly larger changes were observed for students assigned to Reading Corps. For example, Kindergarten students assigned to Reading Corps improved by approximately 102 scaled score points from fall to winter and 161 points from fall to spring compared to students in the comparison group who improved approximately 88 scaled score points from fall to winter and 121 points from fall to spring (see Table 3). For first

grade CBM-R, a larger average score was observed among comparison students ( $M = 38.54$ ) relative to students assigned to Reading Corps ( $M = 30.58$ ) at winter post-test. At spring post-test, CBM-R scores were nearly identical across groups. Likewise, first grade students' FastBridge earlyReading scores were markedly similar across groups at the winter and spring post-tests.

**Table 3. Descriptive Achievement Data Across Groups and Occasions.**

		STAR Early Literacy or Reading						FastBridge earlyReading						CBM-Reading			
Gr.	Group	Fall		Winter		Spring		Fall		Winter		Spring		Winter		Spring	
		M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
KG	RC	545.97	79.69	648.09	85.21	706.53	74.73	32.73	2.44	51.59	5.86	65.84	8.27				
	Control	573.09	94.49	661.48	92.39	694.55	76.11	32.88	5.76	52.60	9.78	68.79	14.41				
1	RC	635.04	82.42	737.92	52.13			29.00	2.93	48.48	10.54	66.00	15.75	30.58	13.05	90.84	12.05
	Control	629.85	101.82	741.48	62.48			30.46	5.46	52.25	14.98	67.50	19.51	38.54	20.84	90.64	15.11
2	RC	155.05	81.89	279.28	90.46	351.72	107.09										
	Control	139.26	65.20	219.84	75.52	238.82	90.94										
3	RC	292.85	62.76	386.45	70.41	406.39	92.05										
	Control	311.15	130.56	365.45	131.06	384.12	138.36										

*Note:* Spring STAR data unavailable for first grade students, CBM-Reading data unavailable for second and third grade students.

*Winter Impact.* Results from the regression models examining the impact of Reading Corps on winter outcomes are displayed in Table 4. The first research question of interest pertained to the FastBridge earlyReading scores of Kindergarten and first grade students (Model A; Kindergarten and First). As would be suggested, inferential analyses found that fall achievement (i.e., fall earlyReading scores) was statistically significant and positively related to subsequent winter scores, such that a one score increase above the mean fall earlyReading score was associated with a 1.61 increase in winter earlyReading score. The impact of group assignment on winter earlyReading scores among Kindergarten and first grade students was not statistically significant, indicating Reading Corps was not associated with improved outcomes on this measure for these grades.

The second research question of interest pertained to the STAR Early Literacy scores of Kindergarten and first grade students assigned to Reading Corps (Model B; Kindergarten and First). Results indicate that fall achievement (i.e., fall STAR Early Literacy scores) was statistically significant and positively related to subsequent winter scores, such that a one score increase above the mean fall STAR score was associated with a 0.37 increase in winter STAR scores. Likewise, there was a

statistically significant and positive impact of grade level ( $B = 86.62$  for first grade), as would be expected. No significant effects were observed for grade level or group assignments.

The third research question of interest pertained to the CBM-R scores for first grade students (Model C; First Grade). Results were similar to those observed for Models A and B among Kindergarten and first grade students—students' fall STAR Early Literacy scores were positively associated with CBM-R winter scores; however, no significant impact for treatment assignment was observed.

Finally, we examined the STAR Reading performance of second and third grade students (Model B; Second and Third Grade), controlling for fall achievement and grade level. Similar to previous models, a strong positive relationship was observed between fall scores and winter scores—each scaled score increase above the mean in the fall was associated with a predicted winter scaled score increase of 0.82. Unlike the results observed for Kindergarten and first grade students, the impact of group assignment was both positive and statistically significant. More specifically, assignment to Reading Corps was associated with a 41.27 scaled score increase in winter STAR Reading scores ( $d = 0.36$ ).

**Table 4. Linear Regression Results Examining Winter Achievement Scores.**

	Model A: earlyReading		Model B: STAR		Model C: CBM-R	
	B	SE	B	SE	B	SE
<b>Kindergarten and First Grade</b>						
Intercept	53.77***	2.39	657.95***	21.32		
Fall Achievement	1.61***	0.16	0.37***	0.07		
First	-1.65	1.45	86.62***	12.97		
Reading Corps	-1.24	1.45	-3.25	12.88		
R <sup>2</sup>		0.48		0.37		
<b>First Grade</b>						
Intercept					44.95***	7.31
Fall Achievement					0.06*	0.03
Reading Corps					-7.32	4.60
R <sup>2</sup>						0.09
<b>Second and Third Grade</b>						
Intercept			187.82***	22.58		
Fall Achievement			0.82***	0.08		
Third Grade			126.23***	13.67		
Reading Corps			41.27**	13.67		
R <sup>2</sup>				0.73		

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

**Spring Impact.** Results from the regression models examining the impact of Reading Corps on spring outcomes are displayed in Table 5. Note that due to issues with STAR testing in first grade, STAR Early Literacy results are presented only for Kindergarten. As with winter outcomes, CBM-R data are only presented for first grade. When examining STAR Early Literacy scores among Kindergarten students (Model B; Kindergarten), results indicate that impact of fall achievement (i.e., fall STAR Early Literacy scores) was statistically significant and positive such that a one score increase above the mean fall STAR score was associated with a 0.41 increase in spring STAR scores. The impact of group assignment on spring STAR Early Literacy scores among Kindergarten students was not statistically significant ( $p = .15$ ). Likewise, group assignment was not

associated with improvements on the FastBridge earlyReading assessment among Kindergarten and first grade students (Model A; Kindergarten and First Grade) or on CBM-R scores for first grade students (Model C; First Grade).

In regard to the STAR Reading performance of second and third grade students (Model B; Second and Third Grade), each scaled score increase above the mean in the fall was associated with a predicted spring scaled score increase of 0.70. As with the winter model, the impact of group assignment was both positive and statistically significant. More specifically, assignment to Reading Corps was associated with a 62.13 scaled score increase in spring STAR Reading scores ( $d = 0.50$ ).

**Table 5. Linear Regression Results Examining Spring Achievement Scores.**

	Model A: earlyReading		Model B: STAR		Model C: CBM-R	
	B	SE	B	SE	B	SE
<b>Kindergarten and First Grade</b>						
Intercept	67.55***	3.36				
Fall Achievement	2.29***	0.23				
First	-0.21	2.02				
Reading Corps	-0.47	2.02				
R <sup>2</sup>		.48				
<b>Kindergarten</b>						
Intercept			662.08***	27.28		
Fall Achievement			0.41***	0.10		
Reading Corps			24.90	17.02		
R <sup>2</sup>				0.19		
<b>First Grade</b>						
Intercept					90.58***	6.24
Fall Achievement					0.02	0.02
Reading Corps					0.02	0.02
R <sup>2</sup>						0.19
<b>Second and Third Grade</b>						
Intercept			203.79***	36.15		
Fall Achievement			0.70***	0.12		
Third Grade			97.85***	21.60		
Reading Corps			62.13***	21.63		
R <sup>2</sup>			0.47			

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

## Conclusion and Discussion

### Learnings from the Process

#### Evaluation

Results from the process evaluation provide several considerations for the Reading Corps program in West Fargo Public Schools. Overall, interview respondents across all roles expressed support for Reading Corps with consistent observations that Reading Corps was an integral component of the districts' efforts to improve the reading skills of young children. All interview participants recognized the value of the program from a systems perspective, with teachers and principals expressing particularly explicit appreciation for how it benefits school-wide literacy efforts. In general, the program was also perceived to be implemented in a manner consistent with program expectations and all respondents believed the program improved student outcomes. To help ensure high fidelity of program implementation, respondents noted that the selection of Internal Coaches was important. Coaches with expertise in data-based decision-making and reading intervention were perceived to be more likely to provide high quality support; however, capacity was a major factor as well—Internal Coaches who had time allocated for providing coaching support were perceived to be able to provide a better coaching experience for tutors.

Many respondents also highlighted several constructive considerations to improve either the operation or impact of the program. In regard to operation, training was perceived to an area where changes

Interview participants recognized the value of the program from a systems perspective, with explicit appreciation for how it **benefits school-wide literacy efforts.**

could be made to improve the experience of coaches and tutors. For example, many coaches are familiar with the program and suggested that different tracks might be available for tutors and coaches who have completed a year of the program.

Similarly, tutors reported that the initial training was overwhelming and stressful. Changes in light of these issues might free up additional time for the early year logistics that can be cumbersome (e.g., creating schedules, selecting students).

In regard to impact, respondents suggested that the program could improve communication with teachers - the primary hypothesis underlying this suggestion is that the more teachers know about student progress, the more they will be familiar with the program and its impact on children in the school.

### Learnings from the Impact

#### Assessment

To date, there have been three large-scale randomized control trials of Reading Corps (Markovitz et al., 2014; 2018a; 2018b).

Those evaluations provide strong evidence for the impact of Reading Corps on the most proximal outcomes of interest—the letter sound skills of Kindergarten students, the nonsense word fluency of first grade students, and the oral reading fluency of second and third grade students. However, those evaluations were conducted outside of North Dakota and did not include more distal measures of students' literacy skills. In the current evaluation, we used a series of outcomes that extended upon previous work. Results

in regard to the impact of Reading Corps on student achievement were mixed, with strong positive results observed among second and third grade students and null results observed among Kindergarten and first grade students. In the subsections below, we describe those results in more detail.

*Positive Effects among Second and Third Grade Students.* The most striking finding from the present evaluation was the large effect of Reading Corps on the STAR Reading performance of students at winter post-test and spring post-test. STAR Reading is a broad-based reading assessment that comprehensively covers literacy skills beyond those addressed in Reading Corps interventions. By extension it is a closer estimate to societally-valued literacy outcomes like state proficiency tests. Thus, this finding provides valuable and encouraging information about the degree to which students are able to translate foundational literacy skills into meaningful improvement in the broad domain of reading.

In the present evaluation, assignment to Reading Corps was associated with a predicted increase of roughly 41 points in the winter and 62 points in the spring. The standardized effect size for Reading Corps was  $d = .36$  in the winter and  $d = .50$  in the spring. For the typical student, the average STAR Reading weekly growth for second grade students ranges from 2.2 to 3.5 scaled score points. Among third grade students the average weekly growth ranges from 2.9-3.3 scaled score points (Renaissance Learning, 2014). These typical weekly growth estimates are a useful reference when interpreting the unstandardized effects. For example, the spring effect of 62 scaled score points translates into approximately 17.71 weeks

of additional instructional time on the low end and 28.18 weeks on the high end. In other words, the impact of Reading Corps among second and third grade students in the present study was equivalent to an *additional* half to three-quarters of a year's worth of academic instructional time. This is a very meaningful effect on a distal outcome that Reading Corps had yet to examine in previous research.

*Null Findings among K-1 Students.* Despite promising results among second and third grade students, no statistically significant effects were observed among Kindergarten and first grade students on the FastBridge earlyReading composite score, STAR Early Literacy, or oral reading fluency. Before considering what learnings there might be for the program in the context of these results, it is useful to note that all three outcomes represent somewhat distal outcomes. The earlyReading and Early Literacy scores are obtained from broader assessment of early reading skills whereas Reading Corps focuses primarily on letter sounds (Kindergarten) and nonsense word reading (first grade).

Prior research examining the impact of Reading Corps on letter sounds and nonsense words provides strong and convincing evidence that Reading Corps improves these subskills (Markovitz et al., 2014; 2018a; 2018b). Comparing descriptive results from the present evaluation to other studies shows North Dakota students achieved greater growth than comparison students across all grades on the skills targeted by Reading Corps tutoring (see Table 6). These results provide evidence that students in North Dakota made notable gains on foundational literacy skills, even if those skills did not appear to transfer to more distal outcomes for Kindergarten and first grade students.



**Table 6. Average Weekly Growth Compared to Previous Evaluations**

Study	Kindergarten Letter Sounds	First Grade Nonsense Words	Second Grade CBM-R	Third Grade CBM-R
North Dakota Treatment	2.05	1.93	1.66	1.18
Minnesota Treatment	1.46	2.27	1.61	1.29
Minnesota Control	0.82	1.31	1.39	1.13

*Note:* Minnesota data is from the *Impact Evaluation of the Minnesota Reading Corps K-3 Program* (Markovitz et al., 2018a). Kindergarten and First Grade is the average fall to winter growth. Second Grade and Third Grade is the average fall to spring growth.

However, there is a great deal to learn from the null results in Kindergarten and first grade on broader, more distal measures of reading achievement. One explanation in light of the current findings across grades is that “transfer” of essential, but admittedly narrow, foundational literacy skills may be less likely for younger students working on increasingly narrow skills such as letter sounds in Kindergarten. However, it is also important to consider that there may be some benefit to an expanded approach to supporting students to improve a broader set of literacy skills. Using Kindergarten to illustrate, letter sounds are indeed a major component of early literacy growth; however, there are other subskills involved in overall literacy proficiency for Kindergarten. It may be worth considering a broader approach to intervention that includes additional subskills. The same may be true for first grade, although perhaps to a lesser degree. In both cases, additional options for intervention may introduce more variance in the experiences of students, which could have the added benefit of improving the experience of tutors and students (e.g., two tutors interviewed for this evaluation noted monotony as a challenge with Kindergarten students). Although likely valuable, such

takeaways should be considered in light of alternative explanations to the findings for Kindergarten and first grade, such as the fact that the influence of a sizable portion of comparison students (approximately 30%) receiving an intervention other than Reading Corps could have had a stronger attenuating effect on the group differences for younger students.

Despite mixed results for K-1 and 2-3 students, the current evaluation adds to an already robust evidence base for the program (Markovitz et al.; 2014; 2018a; 2018b). The current study provides new evidence for the generalization of intervention effects to broad measures of reading achievement among second and third grade students. That generalization has not been previously evaluated. Among Kindergarten and first grade students that effect was not found, but in the context of the robust existing evidence for how the program improves foundational skills for Kindergarten and first grade students and a comparison of North Dakota student performance to results from other studies, it is likely that effect is still apparent in North Dakota. Thus the observed results for these grades can likely be considered a source of directions to broaden its impact beyond skills it already improves.

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## About the Authors

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David leads research and evaluation, program innovation, and development of technical solutions for ServeMinnesota's strategic initiatives that support at-risk learners: Minnesota Reading Corps and Minnesota Math Corps. Prior to this position, David served as a Master Coach and trainer for Minnesota Reading Corps, and he also has experience working as a school psychologist. He has a doctorate in educational psychology from the University of Minnesota and specializes in the areas of instructionally-relevant assessment and interventions for struggling students. He has published his work in top journals in the fields of special education and school psychology, presented findings at national conferences, and conducted trainings across the country.



## Appendix A: Process Assessment Tools

North Dakota Process Assessment: Internal Coach Interview	
Site	
Date:	
How long have you been a staff member at your school? How long have you been an internal coach? What is your current role at the school?	
Who is involved in program implementation? Briefly describe their roles.	
Are school staff supportive of Reading Corps members in the school? Please provide examples where possible.	
How well do you think the Reading Corps program is being implemented at your school? What problems or challenges have you encountered during implementation?	
How are students selected for Reading Corps at your site?	
Are the Reading Corps members sufficiently trained to serve as a literacy tutor? Are there any areas where the training of Reading Corps could be improved?	
Are there any particular characteristics of members that enhances or hinders their ability to be successful?	

What other supplemental or intervention programs are used in your site for students that are struggling? Are they similar to or different from Reading Corps?	
If other supplemental or intervention programs are available, how do you select which program each student should receive? Does the presence of Reading Corps allow these programs to support more or different types of students?	
To what extent does Reading Corps fit within the broader systems of support provided by the school? (e.g., RtI).	
How often do you meet with members for coaching sessions? What do those sessions look like?	
Overall are you satisfied with Reading Corps? Do you feel like Reading Corps is impacting the rate at which students reach literacy targets? Why or why not?	
What lessons have been learned about implementing the program at your site that might be helpful to other sites?	
What (if anything) would you change about the Reading Corps program?	
Would you recommend Reading Corps to your colleagues? Why or why not?	

## North Dakota Process Assessment: Principal Interview

Site	
Date:	
How long have you been a principal at your school? How long has Reading Corps been at your school?	
Why did (site name) apply for the Reading Corps program?	
Were any school policies or procedures changed to support program implementation?	
What characteristics or qualities are you looking for in a Reading Corps member?	
Who is involved in program implementation? Briefly describe their roles.	
How well do you think the Reading Corps program is being implemented at your school? Why?	
What problems or challenges have you encountered during implementation?	
Are school staff supportive of Reading Corps members in the school? Please provide examples where possible.	

Is there sufficient support for implementing the program from Reading Corps?	
To what extent does Reading Corps fit within the broader systems of support provided by the school? (e.g., RtI).	
Overall are you satisfied with Reading Corps? Why or why not?	
Is student progress—or response to intervention—communicated with you enough? Do you feel like you understand the extent to which Reading Corps interventions are working (or not working)?	
What lessons have been learned about implementing the program at your site that might be helpful to other sites?	
What (if anything) would you change about the Reading Corps program?	
Would you recommend Reading Corps to your colleagues? Why or why not?	

## North Dakota Process Assessment: Teacher Focus Group

Number of teachers present:	
Date:	
Site:	
What grades do you teach and how long have each of you been a teacher at your site?	
How many years have your students been supported by a Reading Corps tutor?	
What is the core curriculum used at your school for literacy?	
What (if anything) have you needed to do in order to accommodate Reading Corps?	
From your perspective, how are students in your classroom responding to Reading Corps tutoring sessions?	
How do students feel about being part of Reading Corps? [PROBE: Enjoy it? Cooperative? Resistant to being tutored? Upset at being pulled out of class? Upset about having to do more work?]	
Are the AmeriCorps members sufficiently trained to serve as a literacy tutor? If NO: Are there any areas where the training of Reading Corps could be improved?	



Are there any particular characteristics of members that enhances or hinders their ability to work with children?	
Is student progress—or response to intervention—communicated with you enough? Do you feel like you understand the extent to which Reading Corps interventions are working (or not working)?	
Do Reading Corps members receive adequate supervision from the Reading Corps program (either too much or too little)?	
Do you see Reading Corps tutors as part of the school staff?	
To what extent does Reading Corps fit within the broader systems of support provided by the school? (e.g., RtI).	
Overall are you satisfied with Reading Corps? Why or why not?	
What (if anything) would you change about the Reading Corps program?	
Would you recommend Reading Corps to your colleagues within or outside your school? Why or why not?	

## North Dakota Process Assessment: Member Interview

Site				
Date				
Grades Served				
How many years have you served as an AmeriCorps member with Reading Corps?				
Why did you decide to apply for Reading Corps?				
How did the other school staff react to your addition to the site when you first began serving?				
What strategies did you use when scheduling tutoring sessions? How did the process go?				
How many tutoring sessions are provided each day?				
Where do your tutoring sessions take place?				
On a 1-5 scale 5 being the most positive, how much do you and your students like each of the following interventions?	Tutor	Comments on tutor perspective	Student	Comments on student perspective
Letter/Sound Correspondence				
Phoneme Blending				
Phoneme Segmenting				
Blending Words				
Repeated Reading with Comprehension Strategies				
Newscaster Reading				
Duet Reading				
Pencil Tap				
Stop/Go				
Great Leaps				

How do you make decisions about which intervention to use?	
What is your role in monitoring student progress and communicating that information to others at your site?	
How often are you observed delivering interventions? Are those observations helpful for you? Why or why not?	
Do you communicate with school staff (besides the Internal Coach) about the Reading Corps program? If so, what kind of information do you share?	
Overall, do you believe the program is successful in helping students improve their literacy skills? Why?	
What problems or challenges have you encountered during implementation? How did you resolve those challenges (if at all)?	
From your perspective, do any current policies and procedures make it hard to implement the program as intended?	
What changes could be made to help support better implementation?	
Is there anything you'd like to change about the Reading Corps program?	
Do you plan to serve in Reading Corps next year?	
What do you plan to do after you finish serving as an AmeriCorps member?	
Has participating in Reading Corps affected your plans for the future? If so, in what ways?	



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