



# **Grand Forks Reading For All Dyslexia Screening Pilot Program**

## **2019-2021 Summary Report**

## **PROGRAM SUMMARY**

Grand Forks Public Schools recognized a need within the Grand Forks Public School system to identify dyslexia warning signs. The district formed a Dyslexia Task Force to identify three measurable action steps to be implemented with the Dyslexia Pilot Program funded through the North Dakota legislature for the 2019-2021 school years. The action step included:

- Professional Development of Grand Forks Public School Staff
- Enhanced Universal Screening Measures
- Implementation of a reading intervention program using Lindamood Phoneme Sequencing Program (LiPS)

### **Professional Development of Grand Forks Public Schools Staff**

The Grand Forks Public Schools provided professional development to educators on January 18, 2021. The professional development was four hours in length and consisted of staff watching training videos developed by Haley's Hope. The videos discussed the brain science behind dyslexia, red flags for dyslexia, the Orton Gillingham reading approach, and classroom-based interventions and accommodations teachers can implement for students with dyslexia.

Before watching the videos, principals emailed general and special education staff a Google Forms pre-test link to determine their baseline knowledge of dyslexia. Each staff member was directed to complete a pretest consisting of seven multiple-choice questions, two true/false questions, and one question based on a five-point Likert scale ranging from strongly agree to strongly disagree. School staff in each school within the Grand Forks Public School District then watched the videos as a school team. School principals and team leaders at each school led their individual school staff through a series of exercises that mimicked what reading is like for a student with dyslexia. Educators were then provided with a post-test link to assess if there was an increase in their knowledge of dyslexia.

Approximately 750 educators took part in the training and the pre and post-tests. After analyzing the data it was found that the average score on the pretest was 5.95 out of nine points. After the training, the average score increased to 7.68 out of 9. Prior to the professional development, the majority of the staff, 68% rated their understanding of dyslexia as a 1 or 2 on a scale of 1-5. After the training, 90% of the staff rated their understanding of dyslexia as a 3 or 4 on a scale of 1-5. Although there is room for improvement, it would appear that the majority of educators saw an increase in their knowledge of dyslexia.

## Enhanced Universal Screening Measures

The goal of the Grand Forks Reading For All program was to build upon our current reading assessments which include letter identification, letter sounds, rhyming, initial sound isolation, phoneme segmentation, and phoneme blending. The pilot program added a screen for nonsense word fluency and word identification. By adding nonsense word assessments, fluency, and fluent word recognition to the first-grade assessment portfolio we were able to identify students at risk for dyslexia.

The non-word repetition task is a criterion-referenced measure. The task consists of 16 words of increasing syllable length (4 single syllable, 4 two syllable, 4 three syllable and 4 four syllable). All words are nonsense words, but phonetically consistent within English. This means that while the words are not real, they contain the same sound sequences found in English words. Students are presented with each non-word (recorded for consistency) and asked to repeat what they hear. Each non-word is scored as correct or incorrect. A non-word repetition task provides information about a student's ability to process, store and recall sound sequences. Because the task does not use real words, a student's vocabulary knowledge or exposure to language is not a factor.

Students identified as at-risk of dyslexia through the screening process at the designated pilot schools will be recommended to participate in the LiPS reading intervention program (20 weeks). Only the students that are identified as having possible dyslexia will participate in the LiPS intervention.

Upon completion of the screening sessions, 18 students were assigned to the LiPS reading intervention program and 15 were assigned to the Reading Recovery reading intervention program.

## Implementation of a Reading Intervention Program using LiPS

### Screening and Student Demographics

During the 2020-2021 academic year, Grand Forks Public Schools identified students at risk for dyslexia and provided a multi-sensory, systematic approach, the Lindamood Phoneme Sequencing Program (LiPS) to target the phonological deficits that characterize dyslexia. Students identified as at risk for generalized reading difficulties participated in Reading Recovery (RR). Students in four schools participated, two schools provided LiPS intervention and two provided Reading Recovery. Schools were categorized broadly as high or low socioeconomic status (SES) based on the percentage of students receiving free or reduced lunch, following federal guidelines.

Table 1. Socioeconomic status and number of students receiving LiPS and RR.

| School | SES  | Intervention | Number of students |
|--------|------|--------------|--------------------|
| A      | High | LiPS         |                    |
| B      | Low  | LiPS         | 10                 |
| C      | Low  | RR           |                    |
| D      | High | RR           | 7                  |

At the beginning of the school year, all students participated in screening measures in order to identify at-risk readers. The screening consisted of a nonword repetition task, a phonological awareness assessment, and Fountas and Pinnell running record of reading. Students who scored in the lowest 20% of these measures were identified for intervention. Some of the students included in the intervention were English learners and some were also receiving services through an Individual Education Plan (IEP), shown in the table below.

Table 2. *Number of students who are English learners and on an IEP*

|                  | IEP | EL |
|------------------|-----|----|
| LiPS             |     |    |
| Reading Recovery |     |    |

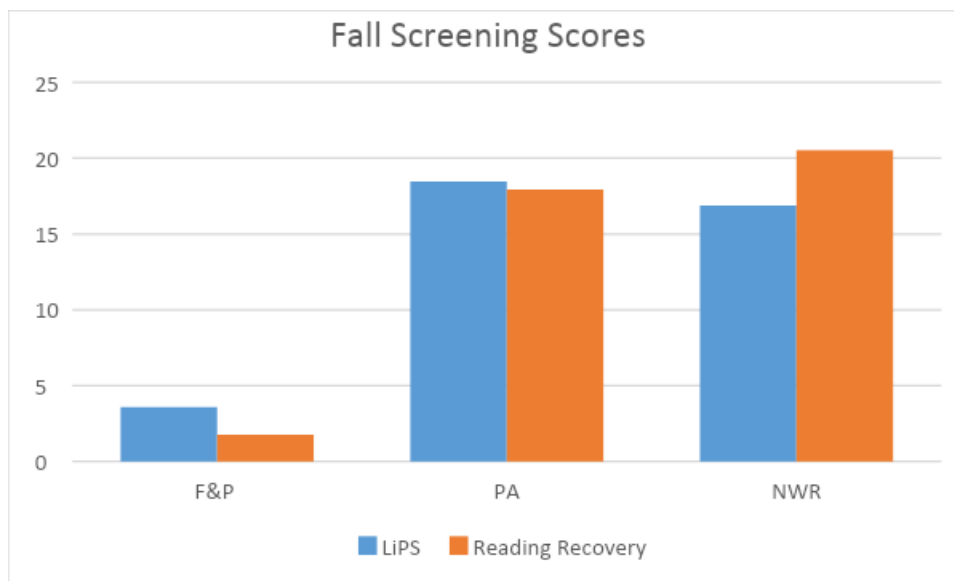
Initially, 18 students were assigned to LiPS intervention and 15 were assigned to RR. Students were removed from the data set if they were missing both winter and spring scores. Three students were excluded. One LiPS student switched to distance learning and then failed to attend further sessions. A second LiPS student began intervention, but the team decided his needs were best met through special education after two weeks. The third LiPS student moved during the school year.

The table and graph below show fall scores for the remaining students (15 LiPS and 15 RR).

Table 3. *Fall screening scores for students selected for intervention*

|     | LiPS         | Reading Recovery |
|-----|--------------|------------------|
| F&P | 3.60 (1.76)  | 1.79 (.80)       |
| PA  | 18.47 (6.42) | 17.93 (10.61)    |
| NWR | 16.87 (6.55) | 20.53 (9.76)     |

Graph 1. *Comparison of intervention groups on fall screening measures*



Students assigned to the LiPS intervention scored higher in fall on the F&P running records than did students assigned to RR and the RR students scored higher than the LiPS student on NWR, but neither difference was significant at  $p < .05$  level. This means that while there was variability in the scores between the two groups, the variability or difference was not statistically significant. The two groups scored similarly on pre-test measures.

### Intervention

Students identified for intervention participated for 10 weeks. At the end of 10 weeks, the educational team considered students' progress in order to determine whether or not to continue with intervention for an additional 10 weeks. The number of sessions for each group is in table 4.

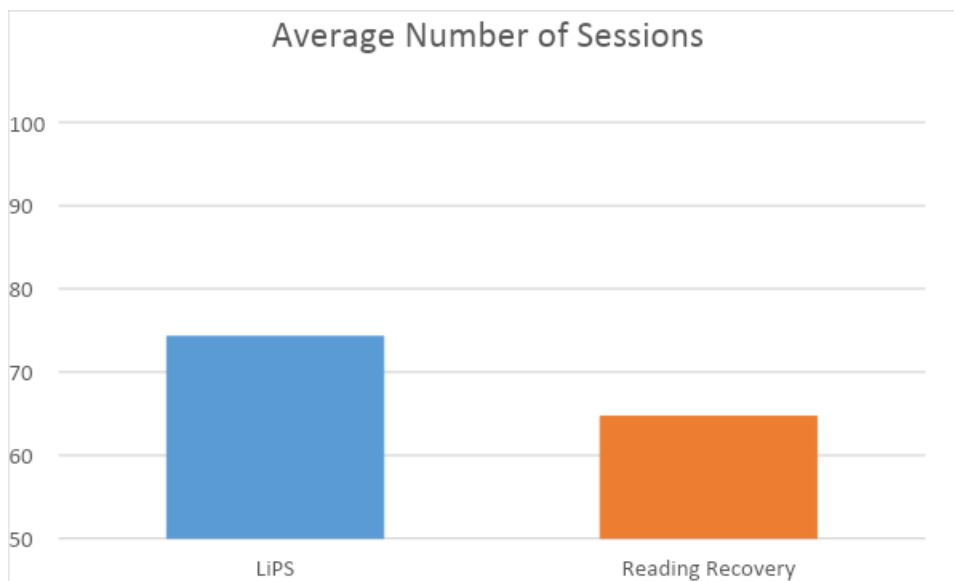
Students participating in Reading Recovery attended individual sessions for 30 minutes per day.

Students receiving the LiPS intervention participated 30 minutes per day in small groups of 2-3 students. Due to COVID-19 safety precautions, students were not grouped according to ability on pre-test measures but were grouped according to classroom. This presented difficulty in managing different levels in the same session. Therefore, after 10 weeks, a switch was made in order to see students individually for a shorter period of time (20-minute sessions). Because of the switch, the number of sessions increased, but actual time spent in intervention decreased. See Chart 2 and 3.

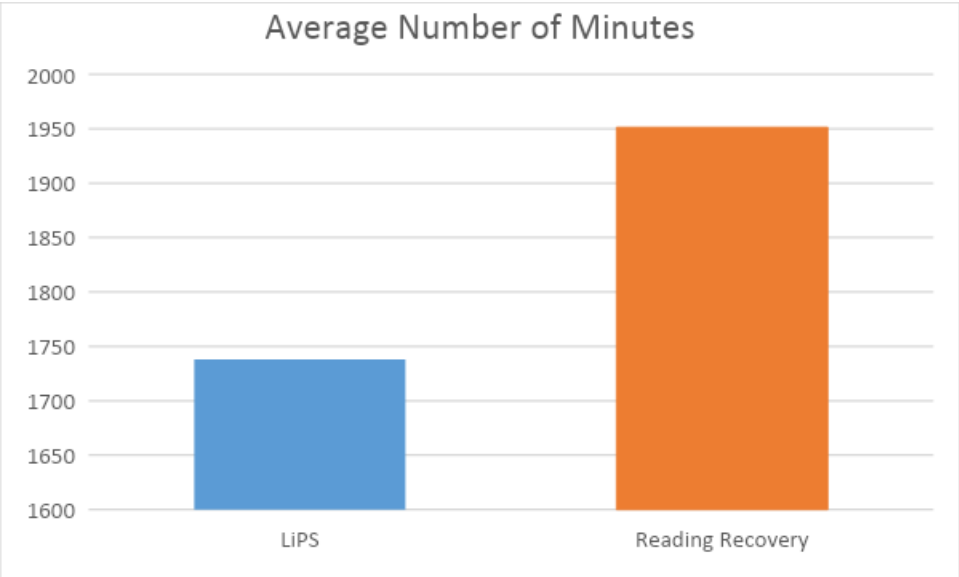
Table 4. *Average time students spent in intervention*

|                          | LiPS    | Reading Recovery |
|--------------------------|---------|------------------|
| % Of Group Time          | 33.44   | 0                |
| % Of Individual Time     | 66.56   | 100              |
| Total Number of Sessions | 74.27   | 64.67            |
| Total Number of Minutes  | 1738.02 | 1951.33          |

Graph 2. *Number of sessions students participated in LiPs vs Reading Recovery*

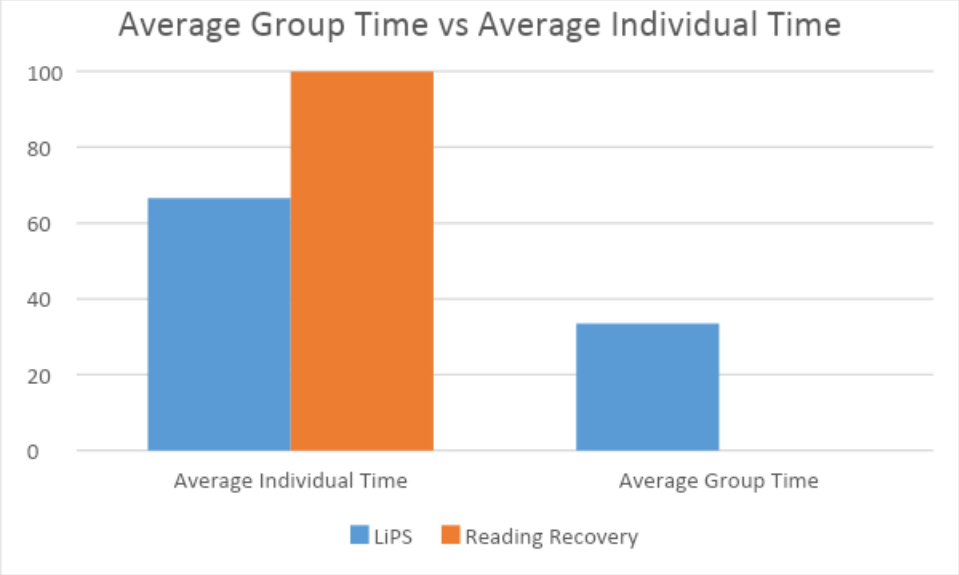


Graph 3. Number of minutes students received in LiPS vs Reading Recovery



While differences in the amount of service provided existed, neither the number of sessions nor the number of minutes was statistically significant between the two groups.

Graph 4. Percent of group vs individual sessions



Statistically significant differences did exist in the amount of individual service received ( $p < .001$ ). All RR sessions are provided individually, while 66% of LiPS sessions were individualized. This means in 33% of LiPS sessions, the teacher divided time amongst 2-3 students. Although there was not a difference in overall minutes, it could be argued that students in group LiPS sessions received less overall time because although the session was the same duration, they received less individualized instruction.

It should also be noted that for a significant number of intervention sessions, both interventions had to be modified to accommodate mask wearing due to COVID-19. This is noteworthy because beginning readers need to perceive sounds and sound differences accurately and often times using the mouth as a visual cue to aid in discrimination is necessary. This is especially important for struggling readers or students with dyslexia.

## **Intervention Results**

In order to measure the efficacy of the two programs, fall scores were compared to spring scores. Winter scores were not used because several students were missing winter scores on at least one measure. Three scores were compared: a phonological awareness assessment, the Fountas and Pinnell running record of reading, and the STAR reading assessment.

The phonological awareness assessment is a criterion-referenced assessment. The total number of correct responses are tallied to yield a raw score. The raw score was used for the analysis. Scores ranged from 0-31 in the fall and 16-31 in the spring.

The F&P yields a reading level of AA-Z. In order to quantify these levels for analysis, letter scores were converted to numerical scores. For example, AA=1, A=2, B=3, etc. Scores ranged from 1-8 in the fall and 2-14 in the spring.

The STAR assessment is a standardized computer-based reading assessment. The assessment yields percentile scores that range from 1-99. In order to complete the STAR assessment, students should be reading at a F&P above a level of "D". No students participating in Reading Recovery met this level in the fall screening, although scores for 11 students were available and included in the analysis. One student receiving LiPS intervention met this criterion in the fall, but scores for 13 students were available and included in the analysis.

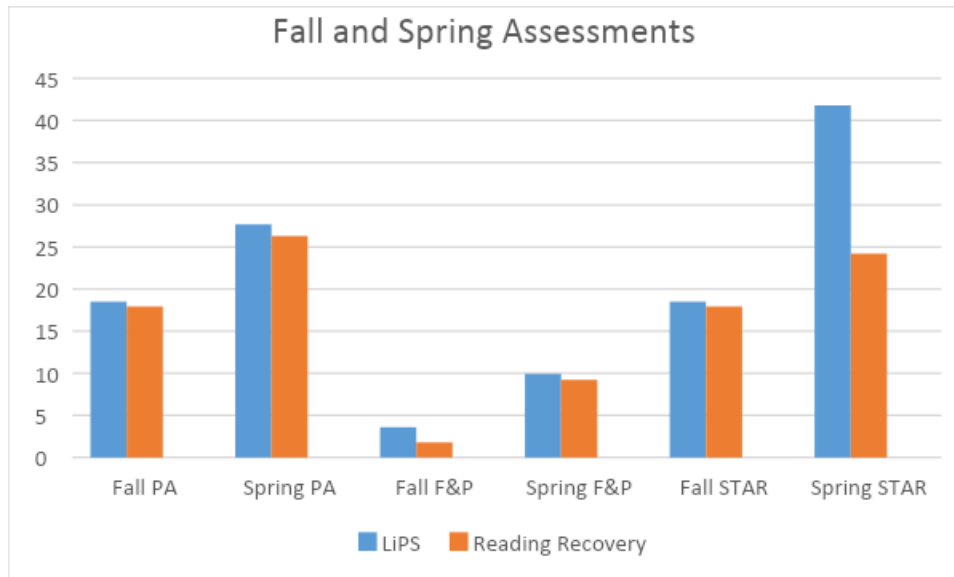


Table 5. Means and standard deviations for fall and spring scores

|             | LiPS<br>M (SD) | Number of<br>students | Reading<br>Recovery<br>M (SD) | Number of<br>students |
|-------------|----------------|-----------------------|-------------------------------|-----------------------|
| Fall F&P    | 3.60 (1.76)    | 15                    | 1.79 (.80)                    | 14                    |
| Spring F&P  | 9.93 (2.76)    | 15                    | 9.20 (1.82)                   | 15                    |
| Fall PA     | 18.47 (6.42)   | 15                    | 17.93 (10.61)                 | 14                    |
| Spring PA   | 27.69 (4.64)   | 13                    | 26.29 (3.02)                  | 14                    |
| Fall STAR   | 12.23 (19.78)  | 13                    | 23.09 (19.21)                 | 11                    |
| Spring STAR | 41.80 (29.49)  | 15                    | 24.21 (14.10)                 | 14                    |

\* $p < .05$

Graph 5. Students' scores on fall and spring reading assessments



The graph illustrates the differences in scores between the two intervention groups at the beginning and end of the school year. Although there is variability in scores, the only significant difference ( $p < .05$ ) is in the spring STAR score. Students who received the LiPS intervention scored higher at the end of the year on the standardized assessment of reading than did students participating in Reading Recovery. There was not a significant difference in either phonological awareness or in F&P reading level between the two groups.

## Summary

Students who participated in both LiPS and Reading Recovery made gains in reading over the course of the intervention. There were two findings that were statistically significant. First, students receiving LiPS intervention participated in more group sessions and therefore received less individualized instruction time compared to peers in the Reading Recovery group. Secondly, students receiving LiPS intervention scored significantly higher on the STAR reading assessment in the spring than did peers in Reading Recovery.

The results of this report should be interpreted in the context of the small sample size. In order to make widespread claims, this analysis should be replicated with a greater number of students. It should also be noted that many of the students participated in a secondary intervention, such as RISE, or may have started in one intervention and switched to the other. Students receiving more than one intervention may have had a greater opportunity to practice learned skills.