



# SHERMAN CENTER

**for Early Learning**  
in Urban Communities

## **READ TWO IMPRESS PLUS:**

**A METHOD FOR BUILDING LITERACY  
PROFICIENCY AND MEANINGFUL  
FAMILY ENGAGEMENT IN TWO  
URBAN SCHOOLS**

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# EXECUTIVE SUMMARY

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When children in urban districts<sup>1</sup> like Baltimore City Public Schools receive high quality literacy instruction (Hollins, 2012), their lives improve. Yet schools continue to demonstrate well-documented failure in educating young children of Color, the majority of whom attend urban schools. Findings from the National Assessment of Educational Progress (NAEP) indicate that only 11% of fourth-grade students in Baltimore City have reached literacy proficiency (National Council of Educational Statistics [NCES], 2018). Among 21 comparable urban districts, Baltimore City stands alone with statistically significant decreases in reading achievement on NAEP in both fourth and eighth grades between 2013 and 2017 (NCES, 2018). Innovative implementation of highly effective early literacy instruction and intervention in Baltimore City is vital.

As a well-documented intervention for students of all ages who read significantly below grade level,<sup>2</sup> Neurological Impress Method (NIM) is a one-to-one process where a tutor, sitting on a student's dominant side, reads aloud a challenging text expressively and slightly faster than the student while guiding the student's finger to track the text (Eldredge, 1990; Heckleman, 1969). Read Two Impress (R2I) is a recent iteration of the NIM intervention in which the student also answers comprehension questions during the read aloud (Young et al., 2015). In our study, Principal Investigators (PIs), Dr. Kindel Turner Nash, an associate professor of early childhood education and Joshua Michael, the co-director of the Sherman STEM Teacher Scholars Program, further enhanced R2I in several ways, naming our adaption Read Two Impress Plus (R2I+).

R2I+ utilizes culturally relevant and authentic texts. With grant support from the Sherman Center for Early Learning in Urban Communities, and using a partnership approach, we provided resources and trained family members of struggling readers at two Baltimore City schools, Maree G. Farring Elementary/Middle School (M. G. Farring) and Lakeland Elementary/Middle School (Lakeland), to read with their children using the R2I+ intervention.

After receiving IRB approval, we recruited family members and then conducted five training sessions in Fall 2018 (M. G. Farring) and three in Fall 2019 (Lakeland) over a 6- to 8-week period. We used a mixed methods design guided by the following three research questions:

- 1) How does R2I+ influence students' fluency and reading comprehension?
- 2) How does R2I+ influence students' attitudes about reading?
- 3) How does implementing R2I+ influence the way family members view their skill and desire to engage their child in reading and literacy practices at home?

Study findings indicated a positive influence of the RTI+ intervention on participating students' attitudes and performance in recreational and academic reading. Students demonstrated an increase in reading fluency (the ability to read accurately and expressively), and frequency of talking about texts. In addition, students appreciated the closeness facilitated by RTI+, and experienced an increase in excitement, motivation to read, feelings of empowerment, and connection with the school. Findings also indicated that the partnership-centered RTI+ intervention had a positive influence on the way family members viewed their skill and desire to engage their children in reading and literacy practices at home.

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<sup>1</sup> Urban is defined as a social and geographic context characterized by human resilience, agency, and racial, cultural, and linguistic diversity. In addition, 'urban' suggests population density, extremes of socio-economic status, mobility, and immigration, including inequitable conditions around education, housing, employment, healthcare, technology, safety, and access to other needed resources (as cited in Nash & Panther, 2019).

<sup>2</sup>Allington (2012) identifies readers who significantly struggle as those reading two or more years below grade level.

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# PURPOSE

The purpose of this study was twofold. First, Read Two Impress Plus (R2I+) was offered as an intervention to improve the literacy proficiency and attitudes of readers who struggle at Maree G. Farring Elementary/Middle School (M. G. Farring) and Lakeland Elementary/Middle School (Lakeland) in the Baltimore City Public School District. We were interested in understanding whether the use of culturally authentic and relevant texts in R2I+ would influence students' literacy proficiency and attitudes.

Second, R2I+ was posited as a tool to empower families through a partnership-centered approach to implementing the intervention. In urban schools, family and community capacities often go unrecognized or are undervalued, resulting in top-down approaches to family engagement (Gadsden & Dixon-Roman, 2017; Nash & Panther, 2019). Such approaches, when combined with prevalent reading interventions, disempower families and communities and disconnect them from schools (Dyson, 2013; Genishi & Dyson, 2015). Partnership-centered (Sheridan & Kratochwill, 2007) reading programs, on the other hand, create contexts and conditions that strengthen home-school connections and facilitate family engagement in students' literacy learning and development (Epstein, 2013; Henderson & Mapp, 2002; Sanders & Epstein, 2005; Sanders et al., 2005).

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# FRAMEWORK

## BACKGROUND: WHAT IS READ TWO IMPRESS PLUS?

As an intervention for students at the early elementary and secondary levels who read significantly below grade level, R2I+ is a one-to-one process where a more experienced reader, sitting on a student's dominant side, reads aloud a challenging text expressively and slightly faster than the student (Eldredge, 1990; Heckleman, 1969). Heckelman (1966, 1969) first identified the method through observation of an adolescent girl whose reading level increased three grade levels after just 12 hours of tutoring. He observed the girl's tutor using kinesthetic, auditory, and visual reinforcements to support the young person's reading fluency in brief 10- to 15-minute tutoring sessions. Heckelman (1969) repeated the method with 24 middle- and high school students who were struggling with reading fluency and comprehension. After seven and a half hours of instruction using this method, the mean grade level gain was 1.9 (Range = 0.8–5.9). The method became popular in special education (Arnold, 1972) and continued to appear in handbooks on reading remediation throughout the next several decades (Crawley & Merritt, 1996; Schreiber, 1980). The Neurological Impress Method (NIM) has experienced a resurgence with the development of NIM Plus (NIM+) which includes comprehension questions after the completion of the intervention (Flood et al., 2005) and Read Two Impress (R2I), which follows the steps of NIM but adds the step of students rereading each page independently after the initial echo reading (Young, et al., 2015). Like its predecessor, R2I has led to increases in comprehension and fluency, respectively (Young et al., 2017). Additionally, experimental and non-experimental studies have found positive attitudinal and behavioral outcomes associated with the implementation of NIM, NIM+, and R2I (Flood et al., 2005; Henk, 1981; Young et al., 2015), although more recent studies have shown mixed results (Young et al., 2017).

Our adaptation of R2I is multifaceted; this is why we name the strategy R2I+. R2I+ combines NIM and R2I. While reading a text slightly behind a partner reader and rereading pages after reading, students also answer comprehension questions about their reading (Young et al., 2015). In addition, R2I+ utilizes culturally and linguistically relevant and authentic texts, which have been linked to learners' higher reading comprehension (Garth-McCullough, 2008; McCullough, 2013) and shown to increase interest and motivation by engaging learners with texts that create mirrors to reflect and windows to expand their identities (Bishop, 1990).

This intervention has not previously been used as a tool for facilitating school and literacy engagement with families. However, strong evidence demonstrates that partnership-centered (Sheridan & Kratochwill, 2007) programs create important roles for family members to play in their child's learning and increase students' opportunities for success in schools (Epstein, 2013; Henderson & Mapp, 2002; Sanders & Epstein, 2005; Sanders et al., 2005).

## THEORETICAL FRAMEWORK

R2I+ connects to a sociocultural conceptual framework (Vygotsky, 1978). Sociocultural theory views learning as shaped by "cultural, linguistic, and socioeconomic factors, along with personal interests and situational dynamics" (Dyson, 2013, p. 5). As students are paired with a more experienced reader (family partner-reader), they work within what Vygotsky (1978) terms the zone of proximal development, or the distance between what a learner can perform independently and what can be performed with guidance. A partner-reader apprentices the student in expressive, fluent reading, providing guided practice by modeling proficient oral reading while supporting the student with word recognition and comprehension. Culturally authentic, challenging texts allow the student to perform at the outer limits of their zone of proximal development (Young et al., 2015). This study is also grounded in understandings of asset-based pedagogies including culturally relevant teaching (Ladson-Billings, 1995), funds of knowledge (Moll et al., 1992), and culturally sustaining pedagogies (Paris & Alim, 2017), which center the primacy of understanding what is already working with students who are marginalized in and by schools (Ladson-Billings, 2009).

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# METHODOLOGY

## RESEARCH DESIGN AND METHODS

Mixed methods (Teddlie & Tashakkori, 2011) were ideal for the problem-solving nature of this multi-pronged study. The PIs employed a parallel mixed design in two phases. In the first phase (Fall 2018), quantitative and qualitative data were collected about M. G. Farring students' literacy proficiency, students' reading attitudes, and families' attitudes about reading. A group of 23 second-grade students and their families participated in intensive training on the intervention over 6 weeks. Based on findings from Phase I, the study was replicated at Lakeland with modifications and limitations (Fall 2019). Both phases of the study addressed three research questions.

## RESEARCH QUESTIONS

1. How does R2I+ influence students' fluency and reading comprehension?
2. How does R2I+ influence students' attitudes about reading?
3. How does implementing R2I+ influence the way family members view their skill and desire to engage their child in reading and literacy practices at home?

## SCHOOL CONTEXTS

M. G. Farring and Lakeland are located in a geographically isolated part of Baltimore City, south of the Inner Harbor and greater Patapsco water basin. This geographic location limits access to public transportation and resources across the city. This is a historically industrial region once populated by steelworkers and shipbuilders, where Black and White residents have co-resided for a century. In part because of the relative affordability of housing in the South Baltimore community, Latinx immigrants primarily from Central America have established a home in this region. As both school-communities are located along the Baltimore City border adjacent to Baltimore and Anne Arundel counties, the communities experience relatively high rates of transience to and from county schools.

The first partner school, M. G. Farring, is ethnically/racially diverse with 30% of students identifying as African American, 28% White, 36% Latinx, and 5% Other. The majority of students receive free or reduced priced lunch. Fourteen percent of students at the school have an identified disability and 18% are learning English as a second language. It is a low-performing urban school with over 90% of third-grade students not demonstrating proficiency on the state assessment and nearly 60% performing at the lowest of five proficiency levels (Maryland School Report Card, 2017). However, teachers, administrators, and families are in the process of engaging in systemic school improvement. Partnering with the school to implement R2I+ was part of the school's efforts to achieve its goals of increasing literacy proficiency and family engagement.

Lakeland has a student population that is 62% Latinx, a larger subgroup of Latinx students than nearly all other schools in the district. Thirty-three percent of students are African American, and 5% Other. Forty-one percent of children are learning English as a second language and 11% have an identified disability. Over the decade, the student population has grown two-fold, now serving approximately 1,000 students in pre-kindergarten through Grade 8. Lakeland demonstrated the most growth in reading and math proficiency from 2014 to 2019 on the state assessment of all schools in Baltimore City. In 2014, Lakeland performed in reading and math at near the tenth percentile when compared to other schools. By 2019, achievement scores had risen to the median achievement levels across the state, with middle school reading and elementary math scores exceeding state performance levels. Yet, elementary reading proficiency stands at 37.2%. Overall, Lakeland values biliteracy and bilingualism, being one of the only schools in the large school district that designed and is currently piloting a dual language education program (Mata-McMahon et al., 2020).



## PARTICIPANTS

### *Maree G. Farring Elementary/Middle School*

Participants were recruited from the entire second grade population at M. G. Farring. Twenty-three second graders of a range of reading abilities and their family members registered as participants. The treatment group was 61% female and 39% male. By race, the group was 26% Black, 35% White, and 26% Latinx (see Table 1). Seventeen percent were learning English as a second language (ESL) and 17% of students were identified as students with disabilities. A control group was developed with the remaining 55 second-grade students. As shown in Table 1, demographic differences were not statistically significant between the treatment and control groups. Dynamic Indicators of Basic Early Literacy Skills (DIBELS) fluency scores and Text Reading Comprehension (TRC) levels varied between the treatment and control group, but the differences were not statistically significant according to a two-tailed t-test (see Table 1).

**TABLE 1**  
Comparisons Between Treatment and Control Groups, M. G. Farring

	Treatment	Control	Difference
N	23	55	
<b>Demographic Data</b>			
Female	0.61	0.51	0.10
Black	0.26	0.29	-0.03
White	0.35	0.40	-0.05
Latinx	0.26	0.31	-0.05
Asian	0.04	0.00	0.04
Multiracial	0.09	0.00	0.09**
English as a Second Language	0.17	0.27	-0.09
Students with Disabilities	0.17	0.15	0.02
<b>Pre-Reading Data</b>			
<i>DIBELS</i>			
Composite	131.4	105.3	26.1
Accuracy	77.4	65.8	11.6
Fluency	39.5	31.6	7.9
Retell	21.6	15.5	6.2
Retell Quality	2.4	2.8	0.3
Errors	5.9	6.4	0.5
TRC - Reading Level	6.5	5.2	1.3
***p<0.01, **p<0.05, *p<0.1, two-tailed t- test			

### *Lakeland Elementary/Middle School*

Participants from Lakeland included 16 children, six from second grade, six from third grade, one from fourth grade, two from sixth grade, and one from seventh grade, and their parents. Of the 16 participating children, nine completed both the pre- and post-survey. Data from these nine children and their family members are presented in this report. The ethnic and racial backgrounds of the final sample of participants included six Latinx, one African American, and two White students. The participating parents included six Latinx, one African American, and two White. Participating family members included six self-identifying women and three men. Likewise, nine parents completed the pre- and post-survey and participated in the focus groups. Data analyzed and presented in this report stem from the nine participating parents.

## **DATA COLLECTION**

Quantitative data collected for the study included results from the DIBELS and the TRC, which are norm-referenced literacy assessments, and scaled surveys that measured students’ reading attitudes. Qualitative data included field notes, focus group interviews (see Appendix), and informal teacher and researcher assessments of students’ reading. Table 2 details data sources, type, and frequency.

**TABLE 2**  
Data Sources

<b>Data Source</b>	<b>Description</b>	<b>Type / Frequency</b>
Standardized Literacy Assessments (DIBELS and TRC)	Norm-referenced assessments of reading fluency and comprehension administered to student participants	Quantitative / Beginning of year and middle of year during each phase
Elementary Reading Attitude Survey (ERAS; McKenna & Kear, 1990)	Norm-referenced scaled survey administered to student participants. Instrument has demonstrated reliability and validity.	Quantitative / Pre/post survey during each phase
Focus Group Interviews	Focus group interview protocol guided audio-recorded conversations with family participants at each school	Qualitative / End of each phase
Research Notes and Observations and Informal Conversations	Researcher notes and observations recorded during each phase of the study	Qualitative / Ongoing throughout each phase of the study
Informal Teacher Assessments	Classroom teacher observation of student participants’ reading behavior and attitudes	Qualitative / Beginning of each phase
Informal Reading Assessments	Oral reading fluency assessments of student participants conducted by teachers or researchers (e.g., running record)	Qualitative / Beginning of each phase

## DATA ANALYSIS

Students' performance on DIBELS and TRC, and reading attitudes assessments were analyzed through descriptive and inferential analysis of mean differences of pre- and post-intervention results. Primarily, inferential analyses were conducted using *t*-tests and ordinary least squares (OLS) regression analysis. Qualitative data from focus groups and other sources were analyzed through an independent open-coding process (Charmaz, 2014) and an iterative process of pattern analysis (Miles et al., 2018). Research team members generated in-vivo codes (Charmaz, 2014), direct stems from participants' responses. Corroborating the initial analysis, we engaged in a process of intercoder-negotiated agreement, comparing codes and reconciling any emerging discrepancies (Miles et al., 2018). This process of data analysis facilitated intercoder reliability (Lavrakas, 2008), and triangulation of the emerging themes from both quantitative and qualitative data (Miles et al., 2018).

## RESEARCHERS

Kindel Turner Nash and Joshua Michael were the Principal Investigators at both school sites. Kris'tina Ackerman served as the graduate research assistant during Phase I of the study (M. G. Farring). Jennifer Mata-McMahon and Jiyeon Lee participated as Co-Principal Investigators in the Lakeland iteration of the study. Nash identifies as a White cisgender woman connected to the African American community by marriage. Michael identifies as a White cisgender man. Ackerman identifies as a Black woman who speaks Spanish and Portuguese. Mata-McMahon identifies as Latina, a Venezuelan cisgender woman who speaks Spanish and English. Lee identifies as a Korean cisgender woman who studies multiple languages including Korean and Spanish. We all have extensive experience with teaching and research in public school settings. Our collective research interests and knowledge center on bilingualism, translanguaging pedagogies, supporting historically marginalized students in schools, culturally sustaining pedagogies, children's spirituality, language assessment, and school improvement.

## R2I+ TRAINING

R2I+ training focused on empowering family members with the technical skills and expertise to implement the intervention. We curated a library of leveled culturally authentic texts from which students selected two books each week for reading practice and expanding their home libraries. Consistent with previous research on this intervention (Shanahan, 2020; Young et al., 2017), our goal was for students to read texts that were challenging and even frustrating to them because they had the support of a more experienced reader. Texts were ordered from Lee and Low publishers' Guided Reading Leveled Library. Lee and Low is a publisher with an explicit commitment to cultural and linguistic authenticity and to publishing texts written by authors of Color (Lee and Low Books, 2021). After we received the books, we used Derman-Sparks' (2013) anti-bias framework for evaluating children's literature to further evaluate all texts to ensure there were no stereotypical images or language used.

During the first phase of the study at M. G. Farring, five literacy training sessions were held at the school between September and December 2018. Family members were centered as students' first teachers and as co-educators in supporting their literacy development. Each of the five sessions were held for two hours in the evening, including a 30-minute gathering at the beginning for a family meal. A stipend was provided to compensate family members for their participation in the training. Childcare was provided by school-based liaisons for other siblings outside of the focal second-grade students. Focal students and family members were separated for portions of the sessions including book selection and technical training and brought together to practice and engage in reading practice using the R2I+ method. Families received two challenging books that the children selected, a folder, and a reading log. Families were asked to practice R2I+ together for at least 20 minutes per week, recording the book title and time spent reading on their reading log. Focus groups were held and surveys were administered at the first and last training sessions. All materials and some of the available books were bilingual (Spanish/English), and sessions were simultaneously translated in Spanish and English.

The second phase of the study took place at Lakeland between October and November of 2019. The same procedures for training and implementation described for M. G. Farring were followed. However, we provided three training sessions instead of five due to limited resources.

## VALIDITY AND RELIABILITY

Validity and reliability were achieved through triangulating themes across the multiple data sources (Table 2). All quantitative survey and test instruments used in the study have been evaluated and determined to demonstrate validity and reliability for second. Further, an iterative approach to coding where researchers compared codes and reconciled any emerging discrepancies (Miles et al., 2018) facilitated intercoder reliability (Lavrakas, 2008).

The Elementary Reading Attitude Survey (McKenna & Kear, 1990) was used to measure children's attitudes about recreational and academic reading. Cronbach's alphas of both pre- and post-intervention surveys for the entire survey as well as each subscale were high. At pre-intervention, reliabilities for the full survey, recreational reading attitude, and academic reading attitude subscales were .91, .82, and .88, respectively. At post-intervention, these reliabilities were .85, .82, and .70, respectively. DIBELS and TRC assessments were used to quantitatively measure student reading progress. These assessments were administered by school personnel at regular testing intervals in September and again in January of the school year. DIBELS is designed to measure the acquisition of reading skills and demonstrates strong reliability for test-retest and alternative form measures (University of Oregon, Center on Teaching and Learning, 2018). The assessment demonstrates adequate predictive validity for reading skills, as correlated with the Iowa Assessments for reading. The TRC assessment measures reading comprehension. According to a report published by Amplify (2014), the parent company for this assessment, the TRC assessment maintains strong internal consistency with a median marginal reliability of .86 across grades kindergarten (K) through Grade 3, and higher rates across racial subgroups. However, the TRC and DIBELS assessments are subject to concerns about validity and reliability because reporting is left to the discretion of the school-based proctor.

# RESULTS

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Our study confirms previous findings about the effectiveness of this intervention with children who are struggling with reading fluency. Quantitative and qualitative data collected from students from both schools demonstrated that children’s literacy proficiency and attitudes toward reading improved after their participation in the R2I+ intervention with their family partner-readers. Qualitative data indicate that families felt empowered with a useful tool for fostering bonding time and their child’s reading at home. Quantitative and qualitative results are shared in the following sections organized by school and research questions below. When available, multilingual data are shared.

## MAREE G. FARRING ELEMENTARY/MIDDLE SCHOOL

### *Research question one asked, How does R2I+ influence students’ fluency and reading comprehension?*

With regard to overall literacy gains, participating students demonstrated 52 points of growth from beginning of year (BOY) to middle of year (MOY) in reading fluency based on DIBELS compared to control group students who grew 19 points on average. Therefore, quantitative data indicate that participating students demonstrated a statistically significant increase in reading fluency when compared to other students (see Table 3). The estimated treatment effect of R2I+ for 4 months was 28 DIBELS points, or one fourth of a year of growth, in addition to regular growth, as shown in Table 4. To estimate the effect size of the intervention, we standardized the fluency measure and used OLS regression to model treatment and control variables. Here, we detect an effect estimate of 0.25 standard deviations for the R2I+ intervention on reading fluency (see Table 5).

Improvements in reading fluency were also noticed by family members. When asked about their experiences with using R2I+, one sibling partner reader said his sister “likes to use her finger to read with me and this helps her read and understand the book better.” Additionally, one mother said, “She likes reading behind me because it helps her be able to read the story at her own pace.” Another parent discussed the positive impact of the visual and kinesthetic aspects of R2I+ on her child’s fluency:

*So I think for us to touch each word, I think it helped her. As we were going along. I don’t know how you explain it, but it seemed like, when I was touching each word and going along, then . . . it made her read and focus better, from us touching the words. So to me it was a gamechanger.*

We detected no statistically significant difference in reading comprehension between the treatment and control groups on TRC (see Table 3). However, fluency development has links to comprehension development, which in turn influences literacy proficiency (Young et al., 2015). Further, qualitative data support the notion that children improved in their text comprehension overtime as they read weekly using R2I+. For example, several parents reflected on their children’s increased comprehension while using R2I+, saying:

*“And it’s very educational for them because what they don’t know, you teaching them and you go back with them and you really gettin’ them to comprehend it.”*

*“They understand, then you know they understand the book.”*

One older sibling who was serving as the family partner-reader said,

*“She understands more of what she read and understands me better.”*

**TABLE 3**  
Pre and Post Achievement Levels, M. G. Farring

DIBELS	Treatment			Control			
	Pre - BOY	Post - MOY	Diff.	Pre - BOY	Post - MOY	Diff.	DiD
Composite	131.4	183.6	52.2***	105.3	124.7	19.4***	32.8***
Accuracy	77.4	86.9	9.5***	65.8	78.3	12.5***	-3.0
Fluency	39.5	59.9	20.4***	31.6	47.8	16.2***	4.2
Retell	21.6	34.3	15.3***	15.5	24.5	6.25***	9.1*
Retell Quality	2.4	3.1	0.7	2.8	2.5	-0.1	1.0
Errors	5.9	4.7	-1.3**	6.4	6.1	-0.5	-0.9
<b>TRC</b>							
Reading Levels	6.5	9.2	2.7***	5.2	8.9	3.7***	-1.0

\*\*\*p<0.01, \*\*p<0.05, \*p<0.1

**TABLE 4**  
OLS Regression of MOY Composite DIBELS Score, M. G. Farring (Post)

Variables		(1)	(2)	(3)	(4)
	Treatment	58.918** (26.208)	30.316*** (10.089)	26.439*** (9.326)	28.117*** (9.660)
DIBELS Composite - BOY (Pre)			1.095*** (0.044)	1.131*** (0.040)	1.135*** (0.048)
Female					-3.677 (9.160)
Black					-20.771 (24.566)
White					-37.315 (23.055)
Latinx					-50.020** (24.276)
Asian					-82.067*** (30.855)
Multiracial					0.000 (.)
Students with Disabilities					-8.965 (10.444)
English as a Second Language					22.092 (15.007)
Fixed Effects by Teacher				✓	✓
Constant		124.691*** (15.210)	9.410* (5.543)	26.619*** (9.434)	60.801** (27.182)
r2		0.058	0.869	0.869	0.905
N		78	78	78	78

Standard errors in parentheses, \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

**TABLE 5**  
**OLS Regression of MOY Standardized Composite DIBELS Score, M. G. Farring (Post)**

<b>Variables</b>		<b>(1)</b>	<b>(2)</b>	<b>(3)</b>	<b>(4)</b>
	Treatment	0.524** (0.233)	0.270*** (0.090)	0.235*** (0.083)	0.250*** (0.086)
Standardized DIBELS Composite - BOY (Pre)			0.938*** (0.033)	0.938*** (0.033)	0.941*** (0.040)
Female					-0.033 (0.081)
Black					-0.185 (0.219)
White					-0.332 (0.205)
Latinx					-0.445*** (0.216)
Asian					-0.730*** (0.274)
Multiracial					0.000 (.)
Students with Disabilities					-0.080 (0.093)
English as a Second Language					0.197 (0.133)
Fixed Effects by Teacher				✓	✓
	Constant	-0.115 (0.135)	-0.080 (0.053)	0.110 (0.088)	0.417* (0.232)
	r2	0.058	0.869	0.896	0.905
	N	78	78	78	78

Standard errors in parentheses, \*\*\*p<0.01, \*\*p<0.05, \*p<0.1

### **Research question two asked, How does R2I+ influence students' attitudes about reading?**

Triangulating across multiple qualitative data sources (e.g., focus group interviews, observations, informal conversations and assessments) shows that many of the children felt better about reading after participating in the intervention with their family members. For example, in a focus group interview, one mother said her daughter is more motivated to engage in literacy acts at home:

*You know, it's encouraging them. They go home and act like they can read these big ol' books. My daughter be coming in the house, like, get any book. My kids be pulling out encyclopedias and everything. . . They run straight in the house and they be like, 'Pick any word, I'ma spell it.' It just, you know, it gives them motivation, motivation.*

Her words echoed the sentiments of other family members who shared how much more confident in reading their children felt in informal conversations throughout the trainings:

*"My daughter is more confident in how she reads out loud."*

*"He is more excited and confident to read."*

*"She's reading more."*

*"He definitely has more confidence in reading."*

*"They wanna read every book you got!"*

On the last training night, after we had all celebrated our coming together to support the students with reading for 8 weeks, one father reflected, "I really think, I think, I just overall, the whole overall thing is just good, it's just good for them, gets them into reading."

Interestingly, the difference in pre- and post-intervention measures from the Elementary Reading Attitude Survey indicated a marginal decline, although not statistically significant, in participating children's dispositions toward reading. This result does not triangulate with the other quantitative data and the significant gains in reading fluency detected on the DIBELS assessment. We believe that student responses may have been subject to a form of social desirability bias at the beginning of the program. In this form of bias, respondents have a tendency to provide responses that are more acceptable or desirable in society (Grimm, 2010). In this case, we believe students provided responses that overstated how much they like to read and how much they actually read at home. We did not plan effectively for this bias, and so the data are not included at great length in this report.

### **The third research question asked, How does implementing R2I+ influence the way family members view their skill and desire to engage their student in reading and literacy practices at home?**

The statistically significant differences in reading fluency gains complement the qualitative findings, which indicate that family members felt increased skill and ability with supporting their child with reading and literacy practices at home. Most families demonstrated confidence by sharing that after they had been through the training, they had taught the intervention to friends and family:

*"I've shared with two of my other friends."*

*"I shared with my cousin whose child doesn't like to read."*

*"I tried to get her dad into doing the same thing."*

*"I have shared it with a few friends who have younger children and stuff."*

Family members also indicated that R2I+ increased bonding and positive interactions around reading at home. One father reflected, "It's like a partnership with your kids. It's like, you're doing something together. That was cool." Another reflected, "He tries a little harder at reading when we do it together." Families also discussed how the intimacy of the R2I+ routinized reading at home. For example, one mother said, "Yeah it brings you closer together, I think. Because of the one on



one time, they kind of look forward to this time in the evening.” One mother of twins shared, “See, my kids love it ‘cause it’s more bonding time with me. Anything with Mommy, they love it.” Many other family members shared these feelings about bonding time:

*“I have two sets of twins, it’s eight of them home. So this time when she sittin’ right here with me and I’m talkin’ into her ear . . . it’s her own little world, Grandma and her.”*

*“Yeah, they love this Mommy time, and they’ll fight so hard over everything.”*

*“Yeah, it brings you closer together, I think. Because of the one-on-one time, they kind of look forward to that time in the evening.”*

Finally, R2I+ positioned families as experts, which helped build confidence for both students and families, leveraging and connecting home and school learning. In particular, bilingual books created opportunities for multilingual families’ rich discussions about language. For example during multiple sessions we observed that as students and family partner-readers read bilingual texts together, the student began to take the role of the more experienced reader when echo reading the English text while the family partner-reader took the lead with the Spanish text in the book. As they read together, families took time to compare and contrast Spanish and English words and discuss the etymology and meaning of words. One multilingual Spanish-speaking family member reflected on his experience in the following focus group excerpt:

*Aprendiendo de lo que ellos han aprendido nosotros también. Porque hay muchas palabras, pues, que yo le pregunto al niño ‘mira, esto, ¿qué quiere decir esto?’ y ya él me dice qué.*

*We parents are learning more with them. . . because there are many English words that I ask my son, ‘What does this word mean?’ And he would tell me [the word in English and then I would say it to him in Spanish.]*

Another multilingual family member said “I see my daughter trying to translate the Spanish words and that makes me happy.” Thus, the intervention and the bilingual texts positioned families as experts on language and in that way R2I+ seemed to help both students and families connect to the importance of bilingualism. One multilingual family member beautifully expressed this idea using a story:

*Quando estuvo la guerra en mi país, un puente grande que pasaba sobre un río... Era un puente de oro. Botaron el puente y venían unos americanos... Como ellos no sabían español, la gente se cruzó en la calle y les decía que no pasaran. Y ellos pensaban que “Adiós” les estaban diciendo. Y entonces no detuvieron el carro, no pararon y se fueron al abismo. Y como era un río bien hondo.*

*There was a war in my country, a big bridge that went over a river, it was a golden bridge. They demolished the bridge and then came some Americans. As they didn’t know Spanish, the people they crossed in the street told them that they could not pass. And they thought that they were saying “Goodbye.” And then they could not stop the car in time, and they went into the abyss. And it was a very deep river.*



**Figure 1. Maree G. Farring families practicing R2I+**

## LAKELAND ELEMENTARY/MIDDLE SCHOOL

### *Research question one asked, How does R2I+ influence students' fluency and reading comprehension?*

Children were administered the DIBELS assessment in the beginning (BOY) and the middle of the year (MOY). The majority of children obtained 2-23% higher scores in MOY than BOY, except for one child, whose test scores decreased 1%.

Family members also noticed improvements in their children's academic reading fluency. For example, one parent commented, "She loves when we read together. . . she says it sounds better. When we're both [reading], she says, "Mom, it's like we're singing the same song." Another noticed that after using R2I+ her daughter "can read faster than I can." Finally, one mother shared, in both wonder and exasperation, "I can't, you know, catch up to my child. It's like come on!"

### *Research question two asked, How does R2I+ influence students' attitudes about reading?*

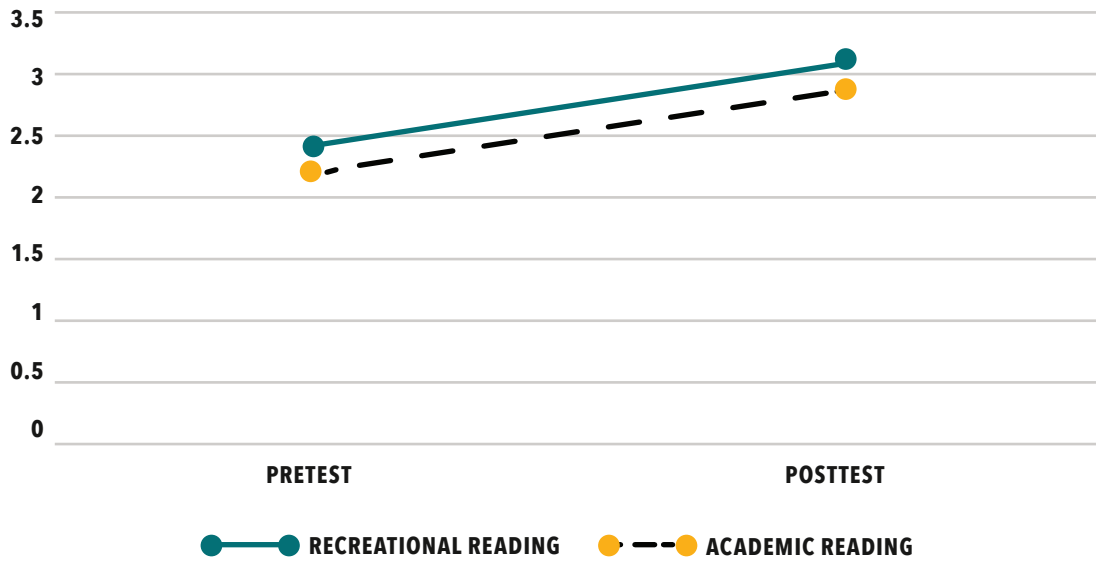
The quantitative findings indicate that the intervention had a positive influence on the participating children's attitudes and performance in recreational and academic reading on both surveys and norm-referenced reading assessments. Table 6 presents the means, standard deviations and minimum and maximum scores for each of the subscales on the Elementary Reading Attitude Survey (McKenna & Kear, 1990). The descriptive statistics shown in Table 6 highlight positive changes among the children's attitudes toward recreational and academic reading as a result of R2I+.

	Pre-intervention				Post-intervention			
	<i>M</i>	<i>SD</i>	Min	Max	<i>M</i>	<i>SD</i>	Min	Max
Survey Total	2.31	0.68	1	4	2.97	0.55	1	4
Recreational Reading	2.41	0.69	1	4	3.08	0.63	1	4
Academic reading	2.21	0.73	1	4	2.86	0.60	1	4

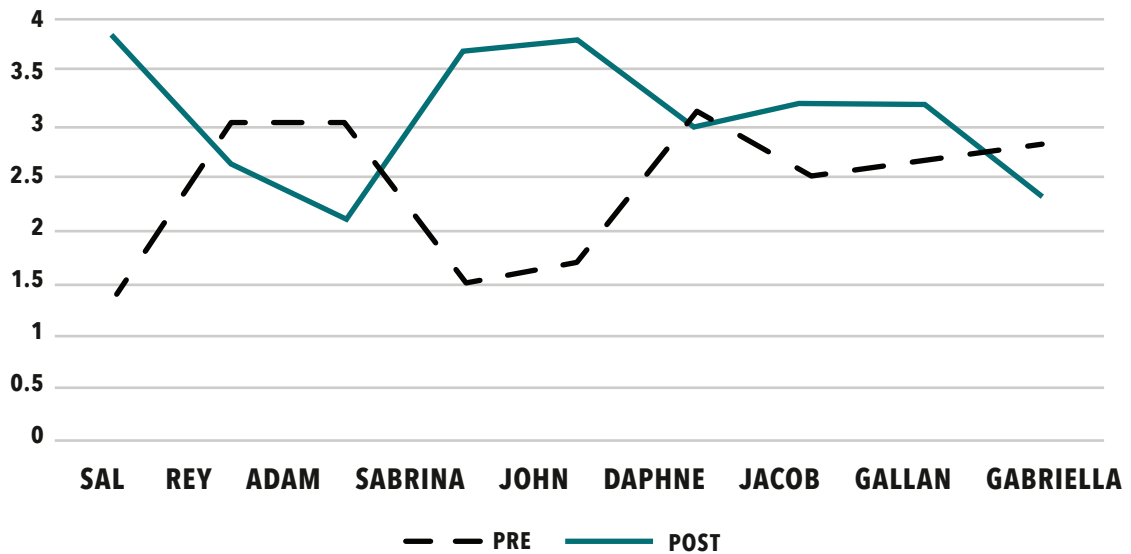
*Note.* (N = 9); *M* = mean; *SD* = standard deviation; Min = minimum; Max = maximum

Figure 2 provides a visual representation of the mean differences between children's attitudes about recreational and academic reading from pre- to post-intervention. We also assessed whether the mean differences in pre- and post-intervention were statistically significant. While Mann-Whitney test results showed that the mean differences between pre- and post-intervention surveys were not statistically significant (i.e., recreational reading attitude  $p = .20$ , academic reading attitude  $p = .07$ ), this does not mean that the positive changes in children's attitudes toward recreational and academic reading are insignificant. As the sample size greatly influences the statistical calculation, it would be a disservice to readers to place too much emphasis on the statistical significance in this analysis (Wassertein & Lazar, 2016). Taking advantage of the small number of participants, we closely examined each individual child's responses in the pre- and post-intervention surveys. Figures 3 and 4 show individual children's increased positive attitudes toward recreational and academic reading, respectively.

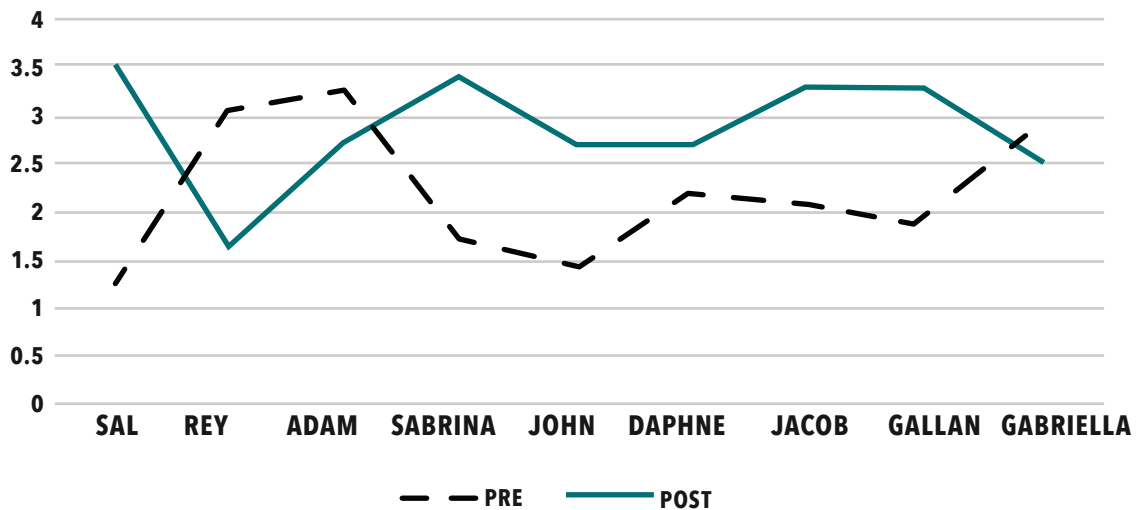
**FIGURE 2. Reading attitudes pre- to post-test, Lakeland**



**FIGURE 3. Individual attitudes toward recreational reading, Lakeland**



**FIGURE 4. Individual attitudes toward academic reading, Lakeland**



Figures 3 and 4 show that the children had a more positive attitude toward recreational reading than academic reading in general. However, children's attitudes toward academic reading from pre to post-survey were higher than recreational reading. Qualitative data also support this finding. For example, one father discussed how prior to using the R2I+ intervention, his child "would read, but he'd read, and that's it. Now, it's not like that. Now, he asks me questions, or sometimes, we talk about the book or what it said. So, he says, 'It's about this,' which he wouldn't do before" (as cited in Lee et al., 2021).

His child was demonstrating increased motivation for academic reading by talking about reading rather than just trying to get it done as he had in the past. Similarly, a mother shared that her child seemed more inclined to talk about what they were reading with her than before. She explained:

*I think that they pay more attention because they know that we're going to ask them. They think, 'If my mom asks me, she'll say, 'Well, are you reading or not?' They start forgetting, and they know. Before now, I didn't ask them anything, but I might ask them later, and if they can't reply, I'll say, 'Then, did you read it, or were you just reading to get it out of the way?' (as cited in Lee et al., 2021.)*

### **Research question three asked, How does implementing R2I+ influence the way family members view their skill and desire to engage their student in reading and literacy practices at home?**

Parents' reflections showed that they and their children had higher engagement and positive attitudes toward school-related home engagement. Such positive attitudes were also evidenced in students' increased motivation toward reading. As one parent, explained:

*I think it is something that encourages the child; it develops them and draws their attention. I think that this kind of program motivates the child. Afterward, they carry on by themselves, but to a large extent, the one who has the main responsibility is you, the parent (as cited in Lee et al., 2021)*

The same parent spoke both about how the intervention caused her to reflect on her great responsibility for facilitating her child's reading as a parent. Similar to the findings from the first phase of the study at M. G. Farring, routinizing reading at home seemed to have a positive impact. For example, a parent reflected on the impact of the regularity of the 10-minute intervention:

*I think that it's because you keep reading with them, and they like books more. They keep reading. If you tell them every day that you're going to read with them for at least 10 minutes, then they really pay attention to you (as cited in Lee et al., 2021)*

Another parent said that on the night of the trainings, her children would excitedly say to her, "Mommy, let's go and read books. Let's go and read books." She discussed how at home now her children "also feel motivated to keep reading books." Parents discussed how before they participated in the R2I+ trainings, they did not feel their children were as motivated to read. For some, this resulted from a lack of books at home or a lack of access to books. One parent said, "Before these things, it was mostly with the phone because I hardly have any books."

Like the families at M. G. Farring, Lakeland parents also spoke to the bonding created through R2I+. As one mother shared, it felt to her like she and her child were "singing a song" together. Over and over, we heard children and families express how they loved the "bonding" and "closeness" afforded by this intervention. Another mother shared how prior to learning about the intervention, reading was enforced and unpleasant for everyone, but after learning about R2I+ she shared "when they sit with you, and you hold their hand to point with their finger, they feel more comfortable with you."

# CONCLUSION

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Multiple studies have shown links between the R2I interventions and improvements in student fluency (Arnold, 1972; Crawley & Merritt 1996; Flood et al., 2005; Young et al., 2015). Our study's quantitative and qualitative findings further confirm and support the effectiveness of this intervention. With R2I+'s addition of comprehension and rereading to the original kinesthetic echo reading practice, family members felt that their children improved in their ability to understand the texts they read when practicing R2I+.

This study's qualitative findings also confirm previous studies that have found positive attitudinal and behavioral outcomes associated with the intervention (Flood et al., 2005; Henk, 1981; Young et al., 2015). Children felt better about reading after spending time reading with their families at home, and in particular about school reading. Trainings focused on empowering family members with the technical skills and expertise to implement the intervention through a partnership-centered approach. Qualitative findings also indicate that families felt empowered and better equipped to support their children with literacy at home. Families from both schools reflected on the value of bilingual texts in particular, and children generally seemed excited about reading the books that represented a range of cultures, ethnicities, races, and languages. While the findings about improved reading fluency and attitudes as a result of the R2I+ intervention are important, we were particularly struck with the way this intervention afforded families bonding time centered around reading.

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# LIMITATIONS

There were several limitations to this study. Initially, we had hoped to provide training on R2I+ to preservice teachers enrolled in education internship courses and collect data about their use of the intervention when working with M. G. Farring students. However, because of time constraints we were only able to collect data about families and children. At both schools, we noted multilingual families talking and sharing books across Spanish and English languages. However, due to time and funding limitations, we were unable to incorporate translanguaging pedagogies into the design of the trainings beyond an acknowledgement and affirmation in our training that translanguaging was acceptable and useful (Mata-McMahon et al., 2020). Although we worked hard to curate a library of culturally and linguistically authentic books, we did not include enough bilingual texts. Thus, the study may have been limited by the lack of such books.

Further, although we chose the Elementary Reading Attitude Survey (McKenna & Kear, 1990) because it had demonstrated reliability and validity in previous studies, we found that it did not effectively measure beliefs and attitudes about reading. It may also have resulted in social desirability bias (Grimm, 2010). Retrospectively, a tool that assessed increased interest in reading would have been a more accurate measure for our purposes.

Finally, the small number of participants for whom we were able to collect both pre- and post-data at each school (M. G. Farring N = 23; Lakeland N = 9) could be considered a limitation. However, this could also be considered a strength. We learned a great deal about children's and families' engagement and proficiency through our informal and formal conversations with them—eating dinner together and talking together in small groups before and after the trainings. These conversations contributed greatly to our understanding of how families thought about supporting their children with literacy, and how they experienced the intervention.

# RECOMMENDATIONS

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We offer several recommendations based on this study. First, we recommend that this intervention continue to be used as a way to empower families with tools to support their children's literacy growth. Our study is consistent with previous research that shows when families have tools they perceive as effective to help foster their children's literacy, children's literacy and parent's feelings of empowerment increase. Second, researchers and schools interested in implementing this intervention need to be especially attentive to selecting challenging (not instructional level) and culturally authentic bilingual books. Further, large-scale experimental implementation of this study will be important for determining its effectiveness in urban school contexts. Finally, we recommend that researchers utilize alternative survey instruments to better understand parents' and children's attitudes toward reading and avoid social desirability bias.

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# APPENDIX

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## FOCUS GROUP INTERVIEW PROTOCOL

### *Procedures*

Gather your group in a circle. Explain that in our last training session we want to get formal feedback through a group discussion about how using Read Two Impress (R2I) has been going. Explain that you will ask them some questions and that the discussion will be recorded, but that their names will not be used. Explain that recording the group discussion will help us understand how these trainings have helped you and what we might have done better. Make it clear that the hope is that with this focus group, we have a natural discussion.

### *Focus Group Interview Questions*

1. Before learning about R2I and other strategies we have talked about, what were the main ways you helped your children with reading at home?
2. Before learning about R2I and other strategies we have talked about, how did you feel about helping your child with reading at home?
3. In what ways are you benefiting from the use of the R2I strategy?
4. In what ways are your children benefiting from the use of the R2I strategy?
5. How would you describe the interactions between you and your children using the strategy?
6. What did you like/dislike about the book selected by your child to read using the strategy R2I? Would you have liked to see any other types of books from which to select (e.g., regarding topics, language or reading level)?
7. We encouraged you to read and talk in Spanish and English as you used this strategy. How did that help you in using R2I?
8. How did you navigate using the R2I strategy while reading in English or in Spanish? Was there a language preference in using the strategy? Why?
9. How did using R2I make you feel about reading with your children?
10. How did reading with your child regularly through this program affect your relationship in other ways?
11. Do you feel like you could teach R2I to a peer? Would you share this strategy with a peer? Why or why not?
12. Name three or four things that you like about the R2I strategy.
13. Students selected their own books, and many culturally authentic books were provided. How did this influence you and your child?
14. What have been some of the persistent challenges or difficulties with the use of the R2I strategy?
15. As you practiced at home, did you find yourself focusing on certain parts of the strategy over others?

## GRUPO FOCAL

### *Procedimiento*

Reúne a tu grupo en un círculo. Explícale que en nuestra última sesión queremos obtener retroalimentación formal a través de una discusión de grupo referente a cómo le ha estado yendo con R2I. Explícale al grupo que le harás algunas preguntas y que la discusión será grabada, pero que sus nombres no serán utilizados. Explícale al grupo que la grabación de la discusión nos ayudará a entender cómo los entrenamientos los han ayudado y qué podríamos haber mejorado durante los entrenamientos. Asegúrate de aclarar que el deseo es que el grupo tenga una discusión natural.

### *Preguntas para el Grupo Focal*

1. Antes de saber sobre R2I y otras estrategias que hemos mencionado, ¿cuáles eran las maneras principales en las que Ud. ayudaba a su hijo/a a leer en la casa?
2. Antes de saber sobre R2I y otras estrategias que hemos mencionado, ¿cómo se sentía Ud. sobre ayudar a su hijo/a a leer en su casa?
3. ¿De qué maneras le benefició a Ud. utilizar la estrategia R2I?
4. ¿De qué maneras benefició a su hijo/a utilizar la estrategia R2I?
5. ¿Cómo describiría las interacciones entre Ud. y su hijo/a utilizando la estrategia R2I?
6. ¿Qué le gustó o disgustó del libro que seleccionó su hijo/a para leer utilizando la estrategia R2I? ¿Hubiese querido tener otras opciones de libros? (e.g., referente a tópicos, idioma, o nivel lector)?
7. Nosotros los animamos a leer y conversar tanto en inglés como en español al usar la estrategia R2I, ¿cómo los ayudó eso al utilizar R2I?
8. ¿Cómo navegaron el uso de la estrategia R2I mientras leían en inglés o en español? ¿Cuál idioma prefirieron utilizar con R2I? ¿Por qué?
9. ¿Cómo se sintió al utilizar la estrategia de R2I al leer con su hijo/a?
10. ¿Cómo afectó su relación con su hijo/a leer regularmente utilizando la estrategia R2I?
11. ¿Cree que podría enseñarle la estrategia de R2I a otros padres? ¿Podría enseñarle la estrategia a otros padres? ¿Por qué? o ¿Por qué no?
12. ¿Puede nombrar tres o cuatro cosas que le gustan de la estrategia R2I?
13. Los niños escogieron los libros a leer, y hubo muchos libros de temas culturales diversos y auténticos, ¿tuvo esto alguna influencia en usted o su hijo/a?
14. ¿Cuáles han sido las dificultades que ha tenido al usar la estrategia R2I?
15. Mientras practicaba en su casa, ¿se enfocó en ciertas partes o pasos de la estrategia más que en otros?



