



A New Vision for Literacy Research in Iowa

REPORT OF THE 2016 INTENSIVE SUMMER READING PROGRAM (ISRP) STUDY

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Executive Summary

The Branstad-Reynolds Administration commissioned the Iowa Reading Research Center (IRRC) to conduct this study of intensive summer reading programs (ISRPs) to investigate various aspects of providing the programs and their effects on the scores of students not reading proficiently at the end of third grade. ISRPs are included in the early literacy legislation originally passed in 2012 and amended in 2016. This portion of Iowa Code 279-68 is set to take effect in 2018 when students who are not reading proficiently at the end of third grade will be considered for retention. Iowa joins 18 other states and Washington, D.C. in this move, prompted in part by the serious long-term consequences (e.g., dropping out of school, criminal behavior) associated with students' early reading difficulties. It has been estimated that approximately 25% of Iowa's third graders (about 9,000 students) are at risk for reading failure and, thus, might benefit from participating in summer reading programs.

The ISRP study focused on three primary aims related to comparing the effectiveness of different curricula at supporting students' reading and examining the influence of student, teacher, and school characteristics. To address these aims, the IRRC recruited classes of 15 students each from 44 different school districts and community programs from across the state. Each class was randomly assigned to be taught by local educators using one of three "conditions" or reading programs: (a) a specific print-based program, (b) a specific computer-based program, (c) a *business as usual* comparison that could be any type of program, as long as it was not the same as the other two conditions.

Study results show all three conditions used were equally effective at preventing a decline of reading skills that can typically occur during the summer months when away from the classroom. On average, however, the ISRPs did not lead to statistically significant growth on tests of students' reading abilities. In the business-as-usual classes, students of minority populations had lower reading performance than White students. With the computer-based

curriculum, students who were English learners had lower reading performance than native English speakers. Across all classes, students in special education had lower reading performance than their non-disabled peers.

The study also included an evaluation of costs, which were based on providing ISRPs statewide for the 9,000 third graders not reading proficiently. The estimated median cost would range from about \$9.25 million to just over \$13.82 million, depending on whether depreciation of assets and administrator pay were included in the calculation. The corresponding per pupil expenditures would range from \$1,193 to \$1,813. Because not all students will be required or choose to attend ISRPs, these figures might be considered the maximum expense.

The study identified potential challenges to implementing ISRPs: (a) planning rigorous reading instruction for up to 4 hours per day, (b) hiring well-qualified personnel to teach and provide literacy coaching, (c) encouraging student participation and consistent attendance in summer school, (d) achieving appropriate class sizes, and (e) ensuring a viable means of monitoring students' reading progress. There also were a number of encouraging findings: (a) school personnel carefully implemented the ISRP requirements, (b) three of the state's Area Education Agencies went out of their way to support the efforts, and (c) students were consistently engaged throughout the summer.

It is encouraging that students in all three study conditions generally were able to maintain their abilities. Most importantly, policy makers and educators need to keep in mind that high-quality reading instruction is critical at all times of the year—not just in the summer. With additional refinement of ISRPs, it may be possible to maximize their benefit as a supplement to the academic year. The challenges identified during the study provide the opportunity for local, regional, and state education agencies to plan for overcoming those issues as they strive to meet the legislative requirements. The lessons learned from this research could prove valuable in helping schools better serve their students.

Background

A report by the Annie E. Casey Foundation documents that student achievement gaps exhibited in early elementary grades are not likely to be ameliorated without targeted intervention (Fiester, 2013). For example, Hernandez (2011) found that although only about one-third of students who take the National Assessment of Educational Progress score at the lowest levels in Grade 4, these students end up dropping out of school at disproportional rates—accounting for more than three-fifths of the students across the U.S. who do not graduate from high school. Other researchers have found that reading ability is associated with overall academic achievement (ACT, 2008; Churchwell, 2009), disciplinary referrals (McIntosh, Sadler, & Brown, 2012), and criminal behavior (Vanderstey, 2006).

Given the serious long-term consequences associated with early reading failure, many state and local education agencies as well as community organizations have sought to extend the instructional year by offering summer school programs (Cooper, 2001). Nationally, over 14 million students are served in summer learning programs (America After 3PM, 2010). The summer break typically is associated with a loss of learning that accrued over the academic year (Skibbe, Grimm, Bowles, & Morrison, 2012), so many summer education models are focused on maintaining students' skill levels. In fact, a study commissioned by The Wallace Foundation found that students who attended quality summer programs subsequently had better school performance than their non-attending peers, and that these benefits were exhibited for at least two years after participation (McCombs et al., 2011).

Current Landscape of Summer Reading Programs in Iowa

During the 2014-2015 academic year, members of the Iowa Reading Research Center's (IRRC) Advisory Council conducted a survey of summer reading programs in Iowa (Hutchison, Forbes, & Missall, 2015). Findings revealed use of a wide variety of models, including a large

number of community-based offerings that were made available either in conjunction with or separately from the school program. Community-based offerings tended to be in place the longest in Iowa, with 68.4% of survey respondents reporting they had existed for more than 15 years. This can be compared with school-based programs that were more likely to have been initiated in the last 5 years (45.8%) as opposed to 15 or more years ago (14.5%). The two most common reasons why summer programs were offered in Iowa were to support students who were not reading on grade level or who were at risk for summer learning loss. By grade level, 86.9% of the school-based and 98.7% of the community-based programs were offered to third graders. However, community-based programs in Iowa were more likely to include only 30 minutes or less of daily reading instruction (79.5% of survey respondents). School-based programs more often offered 60 minutes (22.9%), 90 minutes (24.8%), or 120 or more minutes (26.8%) of reading instruction per day. Nevertheless, there was a wide range of reading curricula being used across contexts, and not all curricula had evidence of effectiveness.

The recent increase in the numbers of school-based summer programs in Iowa may be partly attributable to impending legislation and the awareness that districts need additional options for supporting students who are struggling with reading. In 2018, one element of Iowa Code 279-68 will require that schools provide intensive summer reading programs (ISRPs) to students who are not reading proficiently at the end of third grade and being considered for retention. Iowa is not alone in taking this approach. Approximately 18 states plus Washington, D.C., require or recommend summer reading programs for students who are not reading proficiently (Workman, 2014). States differ in how *reading proficiency* is determined, but all rely in whole or part on standardized tests. It has been estimated that approximately 25% of

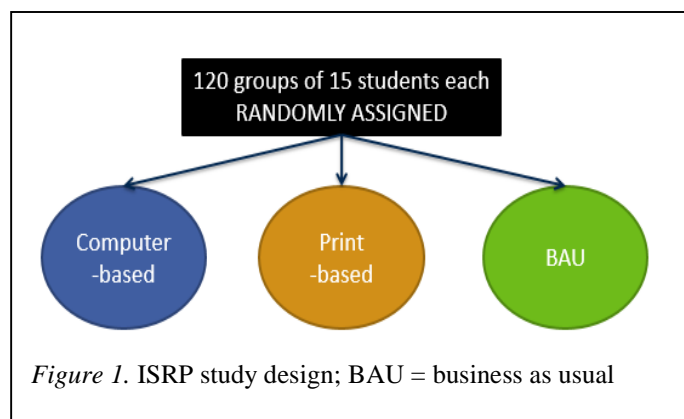
Iowa's third graders (approximately 9,000 students) are not meeting reading benchmarks and, therefore, might be offered participation in ISRPs.

ISRP Study Design

In preparation for this new legislative requirement, the Branstad-Reynolds Administration commissioned the IRRC to conduct a study of ISRPs (hereafter referred to as the *ISRP study*). A number of private donors¹ supported this effort in order to inform the implementation of the legislation across the state. The study had three primary aims:

- **Aim 1:** Determine whether reading curricula identified as having a strong evidentiary base for implementation during the regular academic year are (a) effective when implemented in a summer program, (b) associated with different rates of improvement, and (c) more beneficial than what schools are otherwise offering.
- **Aim 2:** Determine whether student characteristics and school/community contexts are related to reading outcomes.
- **Aim 3:** Determine whether fidelity of implementation of curricular guidelines or summer program criteria are related to reading outcomes.

To address these aims, the ISRP study was designed with a multi-site cluster-randomized design (see Figure 1). That is, classes (termed “clusters”) of students were recruited from 44 different



school and community programs across the state² and then randomly assigned to one of three

¹ A list of donors is available at <http://www.iowareadingresearch.org/research/summer-study/>

² See http://www.iowareadingresearch.org/documents/ISRP-map_080316.pdf for a map of participating sites.

conditions: (a) a specified print-based reading program, (b) a specified computer-based reading program, or (c) a business-as-usual comparison that could be any type of curriculum as long as it did not replicate the programs chosen for the two treatment conditions.

In addition to the primary aims that target programmatic preparations, the IRRC sought to better inform the fiscal preparations of school districts by determining the costs of providing ISRPs.

ISRP Criteria

All primary and secondary aims of the ISRP study are related to the ISRP criteria (Iowa Code 281-61.3), presented in abbreviated fashion below.

1. Each district shall adopt instructional practices or programs that have demonstrated success and that include explicit and systematic instruction in foundational reading skills based on student need.
2. Each district shall employ skilled, high-quality instructors or provide instructors with required training, or do both.
3. Each district shall allow sufficient time for intensive reading instruction and student learning (70 hours).
4. Each district shall provide intensive instruction in small classes (15 students or fewer) and small groups (5 students or fewer).
5. Each district shall monitor and promote student attendance (85% attendance).
6. Each district shall evaluate student outcomes and program implementation (weekly).
7. Each district shall identify whether each student successfully completes the program.
8. Each program shall be under the leadership and supervision of at least one teacher, a licensed administrator, and someone with a reading (K-8) endorsement or a reading specialist endorsement.

Prior to their passage, the criteria underwent a thorough vetting process with multiple stakeholder groups in the state. In addition, they were compared to reviews of literature on summer programs in general, which could have included focus areas other than intensive reading intervention (Borman & Schmidt, 2015). There are notable limitations to the existing research

such as lack of comparison conditions, lack of random assignment to condition, and the use of pre- and posttests from the regular academic year rather than measuring student performance during the summer programs (Cooper, Charlton, Valentine, & Muhlenbruck, 2000; Zvoch & Stevens, 2013; 2015).

In order to draw a direct and tangible connection between ISRP study findings and the ISRP criteria by which school districts must abide, results of the ISRP study are organized by the criterion to which they apply and presented in the sections that follow.

Criterion 1: Each district shall adopt instructional practices or programs that have demonstrated success and that include explicit and systematic instruction in foundational reading skills based on student need.

A major challenge of identifying effective programs for summer school is that the existing research base on reading interventions is primarily built upon studies conducted during the regular academic year, and vendors do not design curricula for the specific purpose of summer programs. Similarly, Iowa's review of reading interventions³ was conducted to support procurement decisions made for the regular academic year. Moreover, those reading interventions might be specific to grade or age levels (e.g., *Jolly Phonics* is only for kindergarten; *Reading Recovery* is only for Grade 1; *READ 180* and *REWARDS* are for Grades 4-12; *Story Friends* is for 4-6 year olds), limited components of reading (e.g., *PAth to Literacy* only targets phonological awareness; *PRESS Paragraph Shrinking* only targets main idea; *Read Naturally* primarily targets fluency; *Wilson* primarily targets phonological awareness and phonics), or particular instructors (e.g., *Minnesota Reading Corps* is delivered only by tutors in a one-on-one pullout).

To be appropriate for the ISRP study, the list the Iowa Department of Education identified as having research with internal validity, external validity, and positive overall findings had to be narrowed down to those that offered comprehensive literacy instruction for students in third grade. Only four programs remained, two of which were created as traditional print materials and two that were computer delivered. The programs were designed for 30 to 90 minutes of daily instruction, but to control costs, most of the districts operated their ISRPs for 3 or 4 hours per day ($M = 3$ hours). Despite efforts to work with the vendors on extending the

³ See <https://www.educateiowa.gov/documents/pk-12/2016/04/early-literacy-interventions-reviewed-list>

recommended implementation time, significant amounts of time were planned as activities not typically a part of the curricula. Observations in classrooms confirmed that these activities resembled those observed in the business-as-usual classes and often made it difficult to determine into which type of class the observer had walked. In particular, students in all classes frequently were observed listening to books being read to them on the computer.

Using 60 minutes per day as the average amount of time for which the assigned programs typically were designed to be implemented, between 60 and 180 minutes per day of the summer

could be spent on

alternative activities (see

Figure 2). This meant the

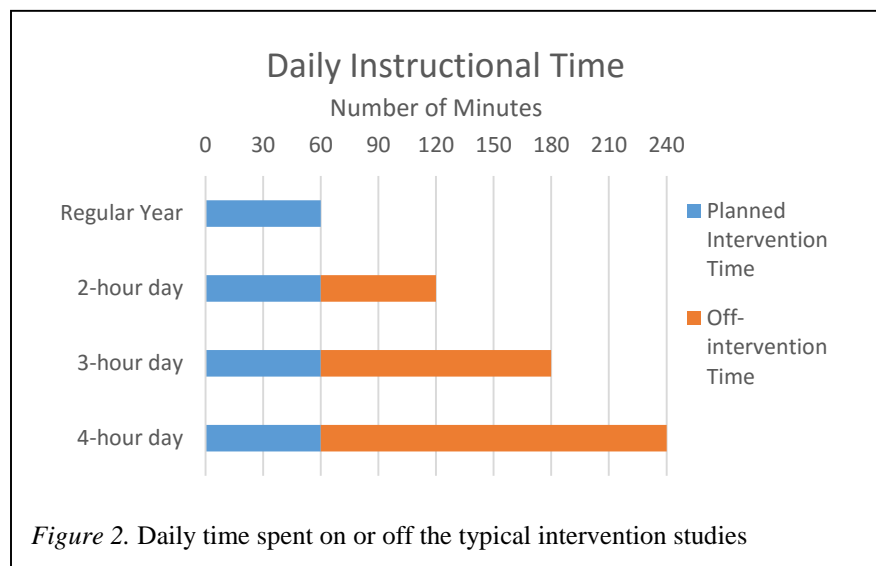
three conditions often were

more alike than distinct,

thus rendering impossible

distinctions among

program components that



were more or less effective at improving students' reading proficiency. Students in all three conditions performed similarly (see section on Criterion 7).

Previous research has demonstrated that students have better learning when lessons are delivered in shorter sessions and distributed over more total time (c.f., Goosens et al., 2012; Torgesen et al., 1999). Because only a couple districts in the ISRP study distributed their 70 hours of instruction over the full summer, it was not possible to determine whether the way they chose to design their programs was related to student outcomes. Future research might compare amassed to distributed instruction in ISRPs.

Criterion 2: Each district shall employ skilled, high-quality instructors or provide instructors with required training, or do both.

Criterion 8: Each program shall be under the leadership and supervision of at least one teacher, a licensed administrator, and someone with a reading (K-8) endorsement or a reading specialist endorsement.

Because Criteria 2 and 8 both concern school personnel, they are considered together. Hiring certified and experienced instructors proved challenging for districts. Many teachers had personal (e.g., family vacations) or professional conflicts (e.g., planned training for other initiatives) that prevented them from committing to the full summer program. Although they might have been willing to teach for part of the time, schools with prior experience in delivering summer programs have deemed it important to provide a single teacher for each class so that instruction will be consistent. The participating students were exhibiting serious reading difficulties, and having teachers drop in and out of the summer program would make it difficult to maintain rapport, connect lessons, and have stable classroom expectations. In at least five large districts and two smaller districts, personnel limitations resulted in hiring newly graduated teachers, educators who had been out of the classroom for over a decade, or long-term substitutes from the regular school year. One rural school district had to withdraw from the study entirely because they could not secure a teacher for either of the two classes of eligible students, and two other districts (one large and one medium-sized) had to drop classes due to a teacher shortage.

There were similar challenges to hiring literacy coaches with reading endorsement or reading specialist certification as required by Criterion 8. Notably, there was a shortage of individuals with the proper qualifications both within districts and the Area Education Agencies (AEAs) that serve the districts. Additionally, potential literacy coaches often had the same personal or professional conflicts teachers had in the summer months. The IRRC negotiated to

have two literacy coaches cross AEA boundaries in order to meet the needs of districts. Although several AEAs were invaluable partners, there was not universal commitment of all AEA personnel. These types of issues may present difficulties to some school districts who will need to rely upon the AEAs for literacy coaching under Criterion 8.

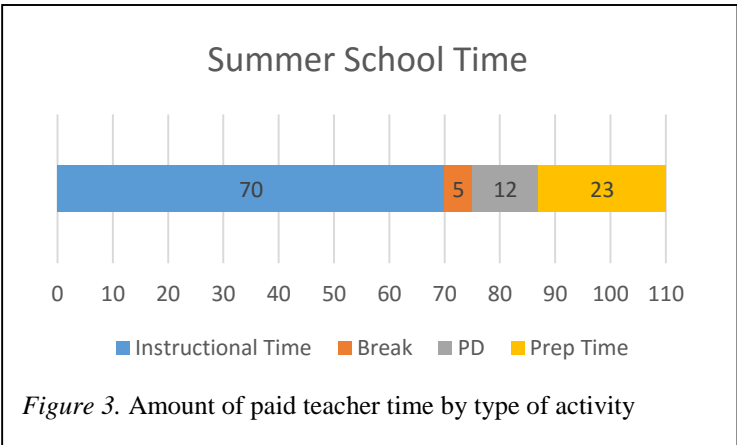
Both the teachers and literacy coaches were required to participate in professional development to either learn how to deliver the assigned reading curriculum or how to implement effective literacy strategies in support of their business-as-usual curriculum. In the computer-based and business-as-usual conditions, the training was 6 hours. In the print-based condition, the training was 12 hours. This is a relatively brief length of time for learning new approaches that had to be implemented in the classroom a short while later. Hence, future planning for ISRPs might consider ways to increase the training and preparation time prior to the start of the programs so that teachers are more comfortable with the materials and expectations.

The final requirement of Criterion 8 is to have an administrator present. Depending on when the summer program was scheduled, the district administrators may have been off-contract or engaged in other responsibilities. Large and medium-sized districts relied upon a coordinator specifically hired to plan and manage the summer program. Smaller districts relied upon principals or superintendents to fill the role. These factors will affect district costs.

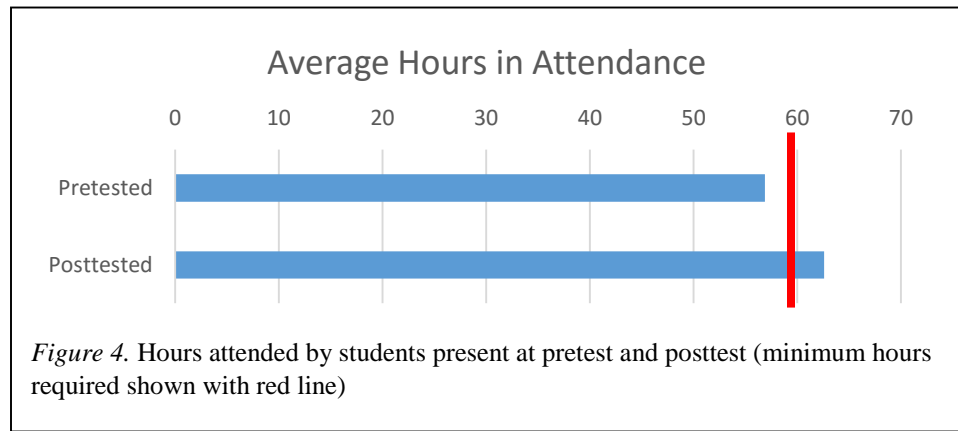
Criterion 3: Each district shall allow sufficient time for intensive reading instruction and student learning (70 hours).

Criterion 5: Each district shall monitor and promote student attendance (85% attendance).

Because Criteria 3 and 5 both concern instructional time, they are considered together. The Iowa Department of Education clarified that breaks or recess could not count as part of the required 70 hours of reading instruction, so offering a 10- or 15-minute break per day added 5 hours to the total summer program time. Districts that provided breakfast or lunch added even more time. With professional development and preparation time, teachers actually worked 110 hours (see Figure 3), which impacts how districts need to budget for ISRPs.



Although schools have to plan for all of this time, students need only be present for a portion of it. Multiplying the 70 hours of instructional time by the 85% attendance required in Criterion 5 produces 59.5 hours that students must attend. During the study, attendance was sporadic across conditions. As shown

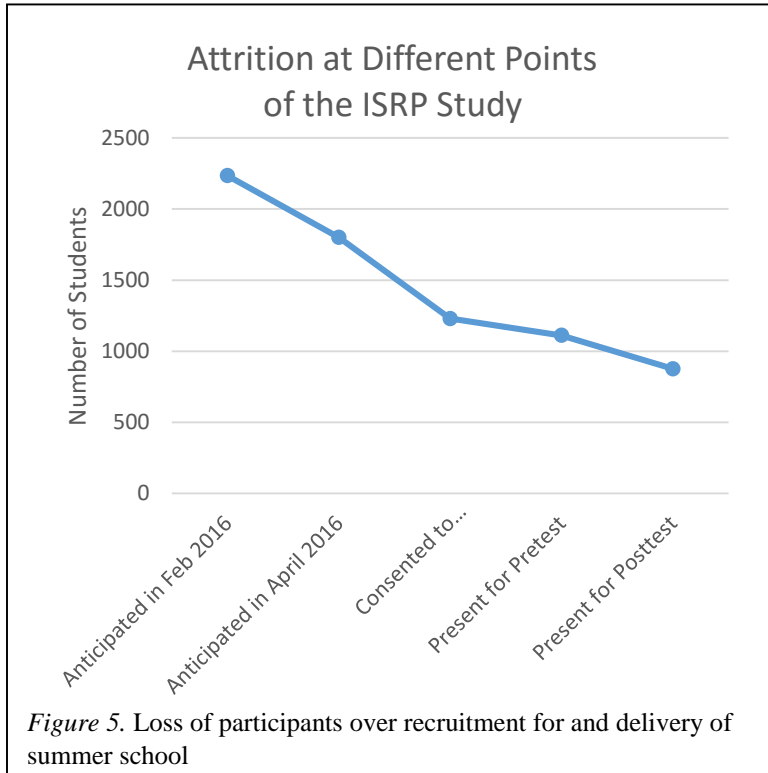


in Figure 4, students who pretested but were not present at posttest attended for 56.9 hours on average. This would

not meet the attendance requirement. Those who were present at both pretest and posttest

attended for 62.6 hours on average, which would fulfill the requirement. Absence rates could not be linked to lack of transportation because they were no higher for districts that provided busing or when the summer reading programs were held within walking distance.

Overall, attrition was high, but the majority of students were lost before summer school even began (see Figure 5). Based on initial responses from schools, 149 classes (2,235 students)



were anticipated to be in the study. This dropped to 120 classes (1,800 students) in April 2016 after adjusting for lack of personnel, internal issues in districts, inability to coordinate transportation across districts forming a consortium, and indicators of low parent interest in summer school. In fact, only 1,229 parents consented for their children to participate, and

even fewer students (1,111) ultimately showed up for summer school. This number continued to decline across the weeks of the program, and only 876 students were present for posttest. From eligibility of the 120 classes remaining in April 2016 to the posttest at the end of the study, attrition was 51%. From pretest to posttest alone, attrition was 21%. Attrition was greater for females, students on free or reduced-price lunch, students who were Black or Hispanic, and those in Title 1 programs. Participation in the 2016 ISRP was optional, and there was no consequence for low attendance. The absences and attrition might be different if ISRPs were mandatory.

Criterion 4: Each district shall provide intensive instruction in small classes (15 students or fewer) and small groups (5 students or fewer).

Capping the class size is theoretically sound because reviews of research indicate students struggling with reading should be taught in smaller groups to facilitate a more targeted focus on their areas of need as well as greater opportunities for practice and feedback (Stevenson & Reed, in press). However, such a mandate presented challenges in implementation. Any district that had 16 to 18 students who were eligible was required either to accept only the first 15 students whose parents consented to participate or offer two classes of 8 to 9 students in order to maintain compliance with Criterion 4. Given the poor attendance experienced, the latter option might have had classes that dwindled down to two or three students, with the district still responsible for hiring two teachers and maintaining two classrooms.

Districts with only 4 to 7 eligible students were encouraged to partner with neighboring districts in order to lessen the financial burden of each. Several districts tried to create consortia, but only two held together for the duration of the study. Two administrators from attempted consortia reported resistance to identifying a single location for the program, which would require some parents to send their children to a different district. One other district reported an inability to send buses into the neighboring district in order to transport students.

Capped class sizes created positive reactions among teachers and students who reported satisfaction with the more personalized setting. Observations of classes confirmed the atmospheres were positive, and there appeared to be good rapport between teachers and students. The average engagement rating was 2.87 (standard deviation: 0.79; range: 1-4), which confirms there were opportunities for students to be actively involved in lessons and moderately high levels of student-teacher interaction.

Criterion 6: Each district shall evaluate student outcomes (weekly) and program implementation.

The first part of Criterion 6 addresses the need to monitor students' reading performance weekly. Districts scheduled their summer programs for a different number of hours per day and days per week; therefore, the progress monitoring had to be standardized across the study sites to ensure equal amounts of instruction occurred between testing waves. The fewest hours in a week was 10 (the district held summer school for 2 hours per day, 5 days per week), so all districts were required to progress monitor after every 10 hours of instruction. Although not required by Criterion 6, the IRRC also pre- and posttested students to gather additional reading data.

The study relied upon the same progress monitoring tool (FAST CBM-R) and universal screener (FAST aReading) hosted by the Iowa Department of Education during the regular academic year and operated through the TIER management system. Unfortunately, the state's usual TIER system was not a viable option for the summer because it could not release new CBM-R passages frequently enough, it shuts down for maintenance each July for at least 2 weeks, the developers could not easily move students within the electronic system from their usual campus designations to the alternative locations the districts designated for the summer (and then back to their home campuses), and pre- and posttesting students with aReading would have "used up" the spring 2016 and fall 2016 universal screening waves for the students.

In an effort to overcome these barriers, the IRRC hosted the summer school students on a platform simulating TIER that the IRRC maintains for training pre-service teachers in institutes of higher education (here forward referred to as the IHE-TIER system). This resolved the above restrictions, but it required that every teacher and every student be manually entered into the system in a series of data entry fields over multiple webpages. Unlike the two other

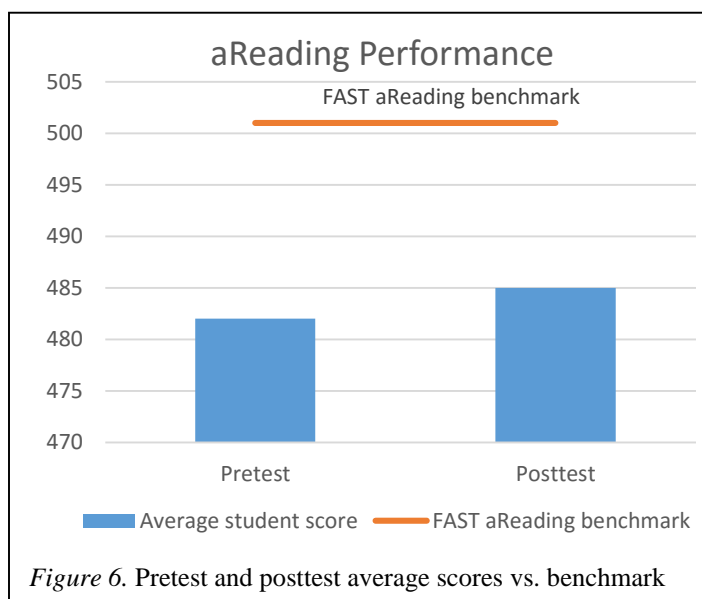
computerized systems utilized in the ISRP study (i.e., the computer-based curriculum and the behavioral assessment), the IHE-TIER system did not allow for uploading electronic files that would preclude manual enrollment and limit data entry errors. In addition, the IHE-TIER system experienced numerous functionality problems that caused extensive losses of instructional time and student data. The poor data quality obtained from the IHE-TIER system has prevented the deeper analysis of the progress monitoring scores as originally intended.

The second part of Criterion 6 addresses the need to monitor the fidelity of implementing the summer reading curriculum. The IRRC prepared fidelity protocols for each condition and had the literacy coaches observe classes weekly while teachers digitally recorded the lessons to verify the observational data. On average, teachers exhibited an instructional quality score of 2.96 (standard deviation [SD]: 0.93; range: 1-4) and fidelity score of 2.45 (SD: 0.93; range: 0-4). These values indicate instructional delivery generally was average but variable. Controlling for teachers' program integrity in the analysis of students' reading scores did not alter the findings (see Criterion 7). However, fidelity was difficult to interpret because the majority of class time was not planned as typical parts of the assigned interventions (see Criterion 1).

Criterion 7: Each district shall identify whether each student successfully completes the program.

Attendance. For students who are required to participate in an ISRP, attendance is an important determinant of whether or not they might be retained in Grade 3. During the 2016 ISRP study, attendance was not required. In that context, only those students who made it to the posttest completed the minimum 59.5 hours of the 70-hour programs (see Criteria 3 and 5). Many eligible students did not enroll in or show up for summer school, and 21% of those who did dropped out over the average 23 days in which the programs operated. Previous research found 88 hours of intervention distributed over four 20-minute sessions per week from mid-Kindergarten through Grade 2 was necessary for students with serious reading difficulties to experience success (Torgesen et al., 1999). The 2016 ISRP programs offered fewer total hours that were concentrated in longer blocks of time per day and only at the end of Grade 3.

Reading performance. Given the importance of reading proficiently for academic success in Grades 4 and above (Fiester, 2013; Hernandez, 2011), it was hoped that summer programs could accelerate students' reading improvement (Workman, 2014). Unfortunately, the students in the 2016 ISRP study did not demonstrate accelerated learning. Across all three conditions,

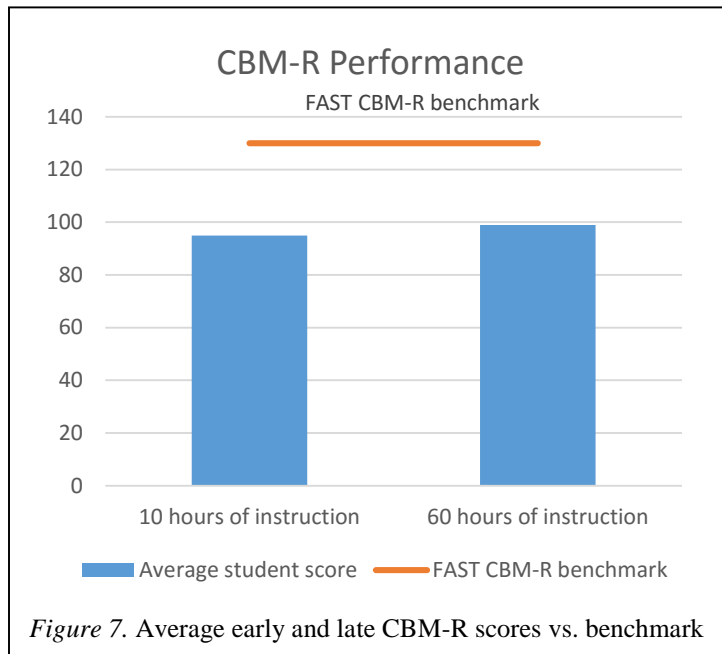


participating students did not make appreciable gains from pre- to posttest on the FAST aReading computer-adaptive measure of overall reading ability (see Figure 6). The ISRP

students' pretest average was 482 (standard deviation [SD]: 20.65), which increased to a posttest average of 485 (SD: 19.28). The Iowa benchmark for third graders' aReading performance in spring of 2016 was 501.

A similar pattern was observed on the progress monitoring measure (see Figure 7).

Students' scores on the CBM-R during the first administration after 10 hours of ISRP instruction averaged 95 words read correctly per minute (WRC; SD: 30), which increased to an average 99 WRC (SD: 32) after 60 hours of summer instruction. The Iowa benchmark for third graders' CBM-R performance in spring of 2016 was 130 WRC.



Completing an ISRP was associated with an average 3- and 4-point increase, respectively, on aReading and CBM-R. This improvement was not statistically significant and did not statistically differ across the three conditions; however, preventing summer learning loss is important (Skibbe et al., 2012). McCombs et al. (2011) found that students who attended a summer program had better performance in the following two academic years than non-attending students. Further research is needed to determine whether students who complete an ISRP are better able to capitalize on instruction in the subsequent year.

Disaggregated results. Despite the finding that students who completed ISRPs generally were able to maintain their reading performance, not all subgroups of students benefited equally.

In the business-as-usual classes, African American, Asian, Hispanic, and Multi-racial students performed on average 6.61 aReading scaled scores below White students (standard error [SE]: 2.56; p -value = .01). As minority student populations in Iowa have increased by 108% between 2000 and 2013 (Iowa Department of Education, 2014), it is concerning that the typical instruction provided in schools did not benefit these students equally or prevent a widening of the gap between their reading achievement and their peers'. Similarly, English language learners in the computer-based condition performed an average 5.02 aReading scaled scores below native English speaking students (SE: 2.31; p -value = .03).

Finally, students identified for special education services performed between 4.19 (SE: 2.14; p -value = .05) and 7.48 (SE: 2.00; p -value < .001) aReading scaled scores below students not in special education. This was true in the computer-based, print-based, and business-as-usual classes alike. A possible explanation for the lower performance of students in special education is that the ISRP participants exhibited a wide range of abilities, which can make it difficult to tailor the instruction as tightly to students' needs as recommended (Stevenson & Reed, in press). In addition, several teachers reported they did not like the scripted lessons in the treatment conditions or the lower level print-based materials that focused more on decoding skills. These educators described preferring to use materials they believed had more motivational comprehension activities instead. Although it is not possible to determine with available data, it may be that teachers' beliefs led them to deliver instruction that was just beyond the abilities of the students most in need of learning foundational reading skills.

Summary of ISRP Study Aims

The ISRP study addressed three primary aims, summarized in Figure 8 below.

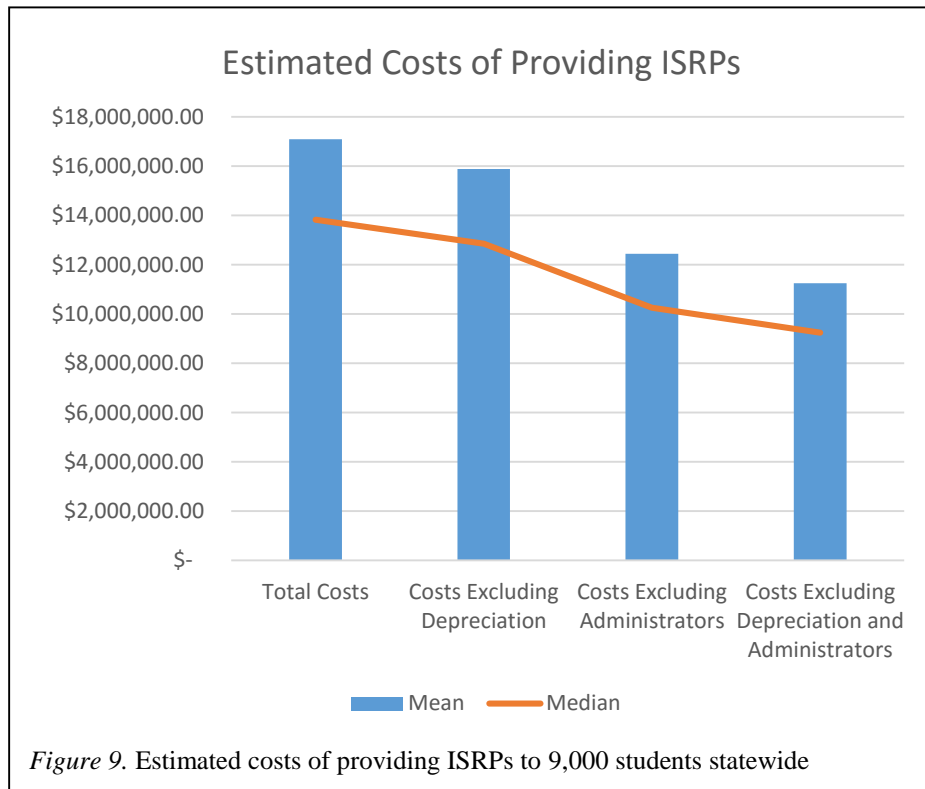
<p>Aim 1: Determine whether reading curricula identified as having a strong evidentiary base for implementation during the regular academic year are: (a) effective when implemented in the more constricted summer program, (b) associated with different rates of improvement, and (c) more beneficial than what schools are otherwise offering.</p>	<p>Findings: On average, all three conditions were equally effective at preventing summer learning loss but were not effective at accelerating reading improvement after controlling for pretest ability. These results were obtained from ISRP programs delivered for an average of 3 hours per day over 23 days. Results might be different with instruction in shorter sessions distributed over more days.</p>
<p>Aim 2: Determine whether student characteristics and school/community contexts are related to reading outcomes.</p>	<p>Findings: In the business-as-usual classes, students of minority populations had lower reading performance than White students. With the computer-based curriculum, students who were English learners had lower reading performance than native English speakers. Across all classes, students in special education had lower reading performance than their non-disabled peers. Further analyses of reading outcomes by district characteristics (e.g., size, when the summer program was implemented) has not yet been possible with the dataset.</p>
<p>Aim 3: Determine whether fidelity of implementation of curricular guidelines or summer program criteria are related to reading outcomes.</p>	<p>Findings: There was variability in teacher quality and fidelity, but controlling for this in the analysis did not impact findings.</p>

Figure 8. ISRP study findings by primary aim

A secondary aim of the study was to evaluate the costs of the summer programs. Because students generally were found to benefit equally in all three conditions, a cost-effectiveness analysis was not warranted. Instead, the IRRC estimated the costs of providing summer school to 9,000 students statewide. Some students may demonstrate their reading proficiency in other ways and not be required or choose to attend an ISRP, but costs were estimated to more closely reflect the maximum expense for programs delivered an average of 23 days (some costs accrue daily).

In the 2016 Legislative Session, a proposal was made for \$9 million in ISRP funding. As shown in Figure 9, this amount would be close to the median estimated cost of \$9.25 million if

no districts in Iowa suffered depreciation of their assets (e.g., wear and tear to classrooms, computers, etc.) during summer school and also did not have to pay administrators for the extra responsibilities of overseeing summer



school. Assuming districts will in fact suffer depreciation of their assets and have to pay for administrators to comply with Criterion 8, the median estimated cost of providing ISRPs statewide would be \$13.82 million.

Alternatively, costs can be explored as per pupil expenditures. Again estimating for 9,000 students being served in ISRPs statewide, the average per pupil expenditure would range from a high of \$1,813 to a low of \$1,193 (excluding depreciation and administrator costs). This can be compared to the average cost of an extra year of school (approximately \$11,427) should a student be retained in third grade. All cost estimates were based on amortizing any new expenditures (e.g., curricular materials, computer hardware or peripherals, computer software, etc.) over five years; thus, initial expenses in year 1 of the ISRPs may be higher.

Implications of the ISRP Study Findings

The findings of the 2016 ISRP study suggest policy makers and practitioners might need to consider the following to improve preparedness for offering summer reading programs:

- Developing comprehensive plans for communicating with parents about ISRPs.
- Ensuring one person within each district can serve as a dedicated leader for planning and managing the summer program.
- Offering ISRPs to students starting at the end of Kindergarten and continuing through Grade 3, as their needs warrant.
- Reconfiguring or finding an alternative to the TIER system for monitoring students' reading progress during the summer.
- Increasing the number of teachers and literacy consultants in the state who have a reading endorsement or reading specialist certification.
- Identifying summer school teachers at the start of the academic year and including those individuals in ongoing planning for the summer program throughout the year.

It should be noted that the results reported here were based on summer programs that were optional for students and that were designed largely as condensed blocks of time (i.e., 3-4 hours per day for an average of 23 days). The findings could be different if students were required to participate in an ISRP or if the instruction was delivered in a more distributed fashion with fewer hours per day across more days of the summer. Future research is warranted to investigate these factors and continue improving the design of summer reading programs.

Most importantly, the IRRC encourages all stakeholders to consider ISRPs as one important component of a continuum of services offered to help students become proficient readers. High-quality instruction offered across multiple years likely will make a far greater impact on student performance than a single, concentrated summer program. Overcoming reading difficulties might best be thought of as a marathon, rather than a sprint.

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