The Impacts of Explicit Systematic Phonics Instruction on the Areas of Decoding and Fluency for Students with a Specific Learning Disability in Reading

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The impacts of explicit systematic phonics instruction on the areas of decoding and fluency for students with a specific learning disability in reading

Marina Hingston

Action Research Report

EDU 643

Fall 2017

University of Southern Maine
Abstract

The purpose of this embedded, mixed methods action research study was to examine the impacts of explicit, systematic phonics instruction on students with a specific learning disability in reading. A phonics intervention program, S.P.I.R.E., was implemented over the course of four weeks. The participants were two 4th graders and one 6th grader, all who had an identified specific learning disability in the area of reading. Data was collected on decoding accuracy pre and post intervention, as well as on reading fluency using timed one minute fluency drills. In addition, student perceptions of the S.P.I.R.E. program were also gathered using a survey administered at the end of the intervention. The overall outcomes of the study indicated that 100% of the students increased their decoding accuracy from the pre to the post assessment. One hundred percent of students also increased their reading fluency scores from the start to the end of the intervention. Student perceptions of the program were positive and students indicated that they enjoyed participating in S.P.I.R.E. The results of this research study indicate that explicit, systematic phonics instruction, taught using the S.P.I.R.E. intervention program, yield positive results. Further implications and recommendations are that the program should continue to be used as a phonics intervention for students with reading disabilities, but that more research is needed to determine long term effects.

Introduction

I currently work as an Educational Technician III in the Special Education department at a K-8 elementary school in northern New England. My role in this program consists of providing both support and direct instruction to students with Individual Education Plans (I.E.Ps). I teach
students who have specific learning disabilities in reading, writing and math. Although I do teach math and writing, the bulk of my day is spent providing one-on-one or small group instruction to struggling readers. The instruction that these students receive is dependent upon the goals stated in their I.E.P.s. Most of the instruction consists of providing some type of phonics intervention, reading leveled books and teaching comprehension strategies. Something I have noticed about the students that I work with, is that although they have a specific learning disability in “reading” it is usually in the areas of decoding and fluency, rather than comprehension. A variety of interventions are available to provide instruction in the areas of decoding and fluency. An intervention that has been used for years in the school where I work is S.P.I.R.E. (Specialized Program Individualizing Reading Excellence). S.P.I.R.E. is a research-based, multisensory intervention program, that focuses on delivering explicit, direct instruction in the areas of phonological awareness, phonics and decoding, fluency, vocabulary, comprehension, spelling, written language and handwriting (Clark-Edmands, 2012, p. v-vi). Students who receive special education services and have a disability in the area of reading, are most often taught phonics skills using this intervention.

For the purpose of this study I examined the impacts of explicit, systematic phonics instruction using the S.P.I.R.E. program, on the areas of decoding and fluency. I focused on three students with specific learning disabilities in the area of reading. Through a review of the literature and conducting my own action research, my hope was to determine whether S.P.I.R.E. is an effective phonics intervention we should continue to use with our struggling readers. I also gathered information on the student’s perceptions of the S.P.I.R.E. program and whether they felt that it improved their decoding and fluency skills.
Teaching students to read is a complex task. This task becomes even more difficult when those students have a reading disability. Although there are a number of studies on what a well-balanced reading curriculum should consist of, there is still much debate over whether a “phonics” or “whole-language” approach is better for teaching reading. Either way, teachers need to teach student skills that will help them “break the code” of reading. These may include phonological awareness activities, phonemic awareness activities, syllabication, fluency practice and comprehension strategies. The end goal of teaching students phonological awareness and phonics skills is for children to then apply those strategies in their reading (Boyle, 2008, p.3).

The terms I will be using throughout this study are defined below:

- “Decoding” is the process of translating print into speech.
- “Fluency” is the ability to read text accurately and quickly.
- “Phonics” refers to letter and sound correspondences.
- “Phonological awareness” is a term used to describe the manipulation of language skills (rhyming, blending letter sounds, segmenting written words).
- “Phonemic awareness” is a sub skill of phonological awareness. It is the awareness that spoken words are made up of phonemes (sounds) and that phonemes can be segmented into individual sounds.
- “Syllabication” refers to breaking down words into pronounceable units.

For students with learning disabilities, teaching new skills and strategies requires explicit, systematic instruction. Explicit instruction consists of the teacher directly modeling the skill or strategy, followed by guided practice with feedback then independent practice (Boyle, 2008, p.4). These skills should be taught systematically, as in they build on prior knowledge and are
taught from simple to complex. In addition, students should not be taught that these skills in
isolation, they should be integrated into a variety of reading activities with the ultimate goal
being comprehension.

The intended audience for this action research project are the members of the EDU 643
class, as well as my professional colleagues. My goal was to determine the impacts of explicit,
systematic phonics instruction on the decoding accuracy and reading fluency of students who
have specific reading disabilities. Additionally, I wanted to examine whether S.P.I.R.E. is an
effective intervention program we should continue using with our struggling readers.

**Literature Review**

In order to guide my research, I conducted a review of the literature that had been done
on phonics instruction and the best methods of reading instruction for students with Specific
Learning Disabilities. I used the EBSCO and ERIC databases to search the terms: phonics,
explicit phonics instruction, systematic phonics instruction, specific reading disabilities and
interventions for struggling readers, to find studies that were available. One of the first studies
that I found was the quantitative meta-analysis that was conducted by the National Reading
Panel in 2001. I used this study as a guide, which led me to three quantitative experimental
studies and one mixed method experimental study that had been conducted on phonics
instruction and interventions or strategies for students with reading disabilities.

In the quantitative meta-analysis conducted by the National Reading Panel, the authors
argue that children should be provided with systematic phonics instruction as part of a well
balanced reading program (Ehri, Nunes, Stahl & Willows, 2001, p. 394). The National Reading
Panel was comprised of 14 individuals who were brought together to evaluate the research on the various approaches to reading instruction. They conducted research on the areas of phonemic awareness, phonics instruction, alphabetics, comprehension, fluency, teacher education and technology. (Ehri, et al., 2001, p. 393). The authors of this study examined 38 other studies found on ERIC and PsychInfo databases, that had been conducted on the area of phonics instruction. There were many questions they sought to answer, such as: Does systematic phonics instruction help children learn to read more effectively than unsystematic or no phonics instruction? Is phonics instruction more effective in some circumstance than others, such as small groups or tutoring, in beginning grades or later grades, and with at risk or struggling readers? As well as, does phonics instruction improve reading comprehension (Ehri, et al., 2001, p. 394)

The meta-analysis that was conducted, examined the effect sizes that resulted from comparing the impacts of phonics instruction on treatment and control groups (Ehri, et al., 2001, p. 403). They analyzed the data using a DSTAT statistical program, and created tables that reported effect sizes depending on several moderator variables such as: type of phonics program, type of control group (basal, regular instruction, whole word), sample size, grade level, socioeconomic status and instructional delivery unit (class, small group, tutoring). The students who participated in the studies were also categorized by type of reader (normally achieving, at-risk, reading disability, and low achieving). Effect sizes on reading outcomes were calculated at three different points during the studies: at the end of instruction or at the end of one year if instruction lasted longer, at the end of instruction and at follow-up points after a delay in
The results of meta-analysis report that after examining the research, systematic phonics instruction helps children learn to read more effectively than non-systematic or no phonics instruction. These results were true in every type of program that was taught to control groups in the studies (Ehri, et al., 2001). They also highlight the importance of teaching phonics early on in education to prevent reading failure. Systematic phonics instruction also had significant effects on children with reading disabilities and is an effective way to remediate reading problems in children whose struggle is specific to reading and not cognitive disabilities. However, in contrast phonics instruction did not benefit low achieving or poor readers (Ehri, et al., 2001, p. 428-429). The seven programs the authors compared did not differ statistically in their effectiveness and they concluded that no one program or delivery system is better than another.

The authors did state that a weakness of their review is that they only considered published studies. A study with a negative outcome is unlikely to be published so the their pool of studies could be biased and unrepresentative of some of the unpublished studies (Ehri, et al., 2001, p. 431). In their discussion Ehri, Nunes, Stahl and Willows suggest questions for further research: How long should phonics instruction continue through the grades? What are the “active ingredients” needed for an effective phonics program? They suggest that more research is needed. Finally, they state that phonics instruction is only one component of effective reading teaching and that there are other essential components necessary for a balanced reading program (Ehri et al., 2001, p. 433).
The remaining studies in my review can be categorized into two groups: three of the studies discuss the effectiveness of specific interventions that would work for students with poor reading skills or persistent reading difficulties (Spell Read P.A.T. Program, Phono-Graphix Reading Program, Read Naturally Program and the Wright Skills Program). The final study evaluates the general effectiveness of implementing explicit phonics and phonemic awareness interventions for students in grades K-2.

The quantitative experimental study by Rashotte, MacPhee and Torgesen (2001) reviewed the Spell Read P.A.T. Program. The authors of this study state that often the question among schools is not whether to implement a phonics instructional program, but what program will be most effective and financially feasible? (Rashotte et al, 2001, p. 119). They reviewed the existing literature and the issues that are usually considered when selecting a reading intervention program, then examined the effectiveness of the Spell Read P.A.T. Program at one school. The researchers report that one of the issues with selecting a phonics intervention program is to decide which components it should include. They recognize that there is debate over whether a whole-word or phonics based intervention is more effective and reviewed studies that argue each side. They also add that in addition to the knowledge of which “ingredients” make up an effective intervention program, schools also should consider whether that program should be delivered in small groups or one-on-one. A final issue they discussed was whether the program can be applied effectively across a number of grades (Rashotte et al., 2001, p. 120-121).

The researchers designed their study to determine the effectiveness of the Spell Read P.A.T. Program delivered to small groups (3-5) of poor readers in multiple grades, over an eight week period (Rashotte et al., 2001, p. 121). Out of 171 students who attended an elementary
school in Newfoundland, Canada, 116 students in grades 1-6 were selected for the study. The selection for their program was based on below average phonetic decoding and word-level reading skills, as measured by the Word Attack and Word Identification subtests of the *Woodcock Diagnostic Reading Battery* (Rashotte et al., 2001, p. 122). They then paired students based on their answers to the tests and randomly assigned them to either Group 1 or Group 2. Group 1 students were provided with the Spell Read program for eight weeks while Group 2 acted as no-treatment controls. Post tests were given after the eight weeks and then Group 1 received no further treatment while Group 2 was given the Spell Read program for the remaining seven weeks. Another post test was given after this period to both groups (Rashotte et al., 2001, p. 122).

In their results section the authors discuss the ways in which they analyzed the data from the two groups. They found that effect sizes ranged from moderate to very strong across all grades. The effect sizes for phonetic decoding were large and reading comprehension was also impressive across all grades. In their discussion the authors state that the results, “indicate that a phonologically based reading instruction program delivered to small groups (3-5) can significantly impact the phonetic and word-level reading skills as well as the reading comprehension skills of deficient readers in first through sixth grade,” (Rashotte et al., 2001, p. 130). They also discuss that an advantage to their approach was that the small group intervention was implemented in grade levels through sixth grade, indicating that the growth in reading skills may not be grade specific but can be generalized to all grades. The only area where the researchers did not find significant growth was reading fluency, which can be a difficult area to effect change (Rashotte et al., 2001, p. 131-132).
In the quantitative experimental study conducted by Denton, Fletcher, Anthony and Francis (2006) the researchers sought to evaluate the effectiveness of the Phono-Graphix reading program and the Read Naturally program on decoding and fluency skills of students who had not demonstrated response to tier 1 or 2 interventions. Denton et al. (2006) discuss that students who do not learn to read adequately in the primary grades will continue to have persistent reading difficulties throughout their school years. After a review of the literature the authors of this study indicated that their purpose was to develop and evaluate a tertiary reading intervention for students in public schools with reading difficulties who had not responded to earlier interventions. They sought to answer the following question:

“Do students with persistent reading difficulties demonstrate significant growth in decoding skills, fluency, spelling, and comprehension when they participate in intensive intervention specifically designed to promote accurate decoding and oral reading fluency?” (p. 448).

The students who were chosen for their study represented a group of “inadequate responders” to a previous study they had conducted on tier 1 and 2 interventions for struggling readers. Their current study was conducted at four schools in a large school district in a southwestern state. The participants were 27 students in grades 1-3 who demonstrated persistent deficits in reading. Of the participants there were 15 girls and 12 boys with an average age of 8.6 years (Denton et al., 2006, p. 449-450). The students in the study received two eight week intervention programs daily, in groups of one teacher to two students. The Phono-Graphix decoding intervention program was given for eight weeks, followed by the Read Naturally fluency intervention program for the next eight weeks. Assessment data was collected in four waves at 8 week intervals, all students were assessed in October and before and after their
completion of each intervention phase. Assessment data was collected using the Test of Word Reading Efficiency (TOWRE), the Woodcock Johnson-III and the Gray Oral Reading Test, 4th edition. The authors looked at student progress in the areas of spelling, and untimed decoding, word and nonword reading fluency, text reading fluency as well as reading comprehension (Denton et al., 2006, p. 453).

The researchers indicated that across 16 weeks of intervention using the Phono-Graphix intervention program and the Read Naturally program there were significant improvements on multiple domains of reading, including decoding, fluency and comprehension (Denton et al., 2006, p. 460). Unfortunately, many of the student’s reading abilities remained below average after the intervention, least apparent however in the students who had previously participated in tier 1 or tier 2 intervention. Denton et al. (2006) report that even students who demonstrate persistent reading difficulties can benefit from intensive reading intervention, especially an intervention that includes explicit, systematic phonics instruction and a high level of student involvement.

The next study in my review was an experimental, mixed methods action research project done by a group at Saint Xavier University in Chicago, Illinois. Brackemyer, Fuca and Suarez (2001) addressed the need to incorporate various methods of teaching as a means to address the lack of phonetic skills among Kindergarten and second grade students. The researchers in this action research study identified that the students at a school in a small midwestern community were exhibiting reading deficiencies that interfered with their academic growth (Brackemyer et al., 2001, p. 1).
In their literature review the authors recognize that a balance of both whole language and explicit phonics instruction is best for teaching reading. They also state that the debate shouldn’t be over which is better but rather, which specific instructional practices are most helpful for children and at which stages of development (Brackemyer et al., 2001, p. 19). To establish a baseline for how students performed phonetically, an assessment by the Wright Group was given. Of the 72 students tested in kindergarten and second grade, a high number performed below grade level in various phonetic concepts (Brackemyer et al., 2001, p. 13).

In this study the researchers implemented The Wright Skills, a supplemental phonics instructional program in both a kindergarten and second grade classroom over the course of five months. “The main principle behind the Wright Group’s program is an integrated, balanced language approach, combining the direct instruction of basic skills with learning opportunities that allow every child to explore literature and become successful in reading, writing and learning.” (Brackemyer et al., 2001, p. 21). The research team assessed the effects of the intervention using pretests and posttests covering the skills identified for reading as well as running records.

In their results section the authors state that after the intervention, more than 75% of the second grade students were performing above grade level and 22% were below grade level in the four phonemic concepts assessed (vowel digraphs, vowel variants, vowel diphthongs and R-controlled vowels). In the kindergarten classroom four concepts were also assessed: whole word discrimination, rhyming words-recognition, rhyming words-application and syllable counting. 81% were scored above grade level for discriminating whole words. Syllable counting was the weakest phonetic skill, and 32% of the students scored below grade level during syllable
counting with the most dramatic improvement being in the area of recognizing rhyming words (Brackemyer et al., 2001, p. 34-35).

Based on their research, “the action research team concluded that repeated exposure to phonics may have helped to develop a better understanding and transfer of skills into reading,” (Brackemyer et al., 2001, p. 35). They also found that most of the students who were actively engaged in the phonetic learning activities were able to retain skills and transfer them into the area of reading. A challenge this team found while implementing the phonics interventions was finding ways to keep students engaged in their learning and create activities that would help them retain the information. Which is always a challenge for teachers!

The final quantitative experimental study by Ryder, Tunmer and Greaney (2007) discusses the impacts of explicit phonics instruction on students with reading difficulties. The aim of their study was to determine whether explicit instruction in phonemic awareness and phonemically based decoding skills would be an effective intervention strategy for children with early reading difficulties in a whole language instructional environment (Ryder et al., 2007, p. 354). In reviewing the literature they discussed the differences between whole language and phonics approaches to reading instruction. Their study was carried out in New Zealand, which follows a predominantly constructivist, whole language approach to reading instruction and intervention. The idea behind a whole language approach is that if children are immersed in a print rich environment which focuses on the meaning of print they will readily acquire reading skills. Children can be taught what they need to know to learn to read “as the need arises.” This approach focuses on learning to read through reading (Ryder et al., 2007, p. 351).
Ryder et al. (2007) go on to explain the benefits of explicit phonics reading instruction. First, instruction in word analysis skills that is taught separately from context, allows children to pay full attention to letter-sound patterns. Second, this instructional approach helps children learn decoding skills that may be useful in many types of texts. Third, including isolated word study at the beginning of remedial reading programs prevents struggling readers from relying on ineffective word identification strategies, such as picture cues and context clues. Fourth, this type of instruction helps readers see the importance of focusing on word-level cues as the most important source of information in identifying unfamiliar words (Ryder et al., 2007, p. 352-353).

The children who participated in this study were selected from a pool of 64 six and seven year old native English speaking children from four 2nd and 3rd grade classrooms in a primary school. The participants were given the Burt Word Reading Test, New Zealand Revision. They were then paired and a child from each pair was randomly assigned to either an intervention or control group. The intervention program was carried out over 24 weeks and children were given the same tests that were administered before the intervention program. The researchers also conducted observations and teacher interviews along with test scores which were also examined.

The intervention programme that was used in this study consisted of 56 highly sequenced, semi-scripted lessons in phonemic awareness and phonemically based decoding strategies. Each lesson had three major components: the phonemic awareness exercises, the main lesson focusing on teaching grapheme-phoneme correspondence and an activity that reinforced the new material introduced in the lesson (Ryder et al., 2007, p. 362). This intervention program sounds similar to the one I will be using in my own action research.
In their results section the authors of this study indicated that the intervention group outperformed the control group in all areas of the post test. The intervention program that was used in this study was not explicitly named but it was, “successful in achieving its primary goal of significantly improving the phonological awareness skills, decoding ability and context-free word recognition skills of struggling readers,” (Ryder et al., 2007, p. 363). These results point to the need of phonics instruction as a part of a well balanced reading program.

The studies reviewed have implications for my own action research study. The question I sought to answer was: What are the impacts of explicit, systematic phonics instruction in small groups on the areas of decoding and reading fluency for students with learning disabilities? From the studies I reviewed, it appeared that there would be significant impacts. However, the intervention that I implemented (S.P.I.R.E.) has not been fully researched by those in the field of education. In fact, I only found one study that used S.P.I.R.E. as an intervention and that was used with students with Disruptive Behavior Disorders. Therefore, this study was the first of its kind, designed to examine the impacts of the S.P.I.R.E. program on the areas of decoding and fluency for students with specific learning disabilities in the area of reading. The S.P.I.R.E. intervention program has many of the same elements as the Spell Read P.A.T. Program that Rashotte et al., (2001) used, yet the age groups I focused on 4th and 6th grade, have not been closely studied. After reviewing the literature, it has become apparent that there is a need for this type of research.
**Research Question:** What are the impacts of explicit, systematic phonics instruction in small groups on the areas of decoding and reading fluency for students with a specific learning disability in reading?

**Sub Questions:**

- What are the impacts on decoding accuracy? (as measured by decoding assessments and running records)
- What are the impacts on fluency? (as measured by fluency drills and running records)
- How accurately will students transfer concepts learned in phonics instruction to real reading? (as measured by running records on decodable books)
- What are student’s perceptions of the S.P.I.R.E. reading program on their decoding and fluency skills? (as measured by a student survey administered at the end of the intervention)

**Research Design**

I chose an embedded, mixed-methods design for this study. I felt it was important to evaluate and analyze data from both quantitative and qualitative sources in order to examine the
impacts phonics instruction, using the S.P.I.R.E. program, had on decoding and fluency. I examined the impacts of phonics instruction through multiple quantitative data sources: pre and post decoding assessments, fluency drills, S.P.I.R.E. Quick Checks and running records. I also analyzed the impacts of phonics instruction through two qualitative data tools: I examined the student’s perceptions of the program through a survey administered after the intervention, and analyzed entries from a journal I kept during the intervention period. Both the quantitative and qualitative data tools provided valuable information, which helped me to determine the overall impacts of phonics instruction using the S.P.I.R.E. program.

Sample and Setting

The school where this study was conducted is located in a small rural town in northern New England. It is a K-8 elementary school with an enrollment of around 144 students. The ethnic makeup of the school is approximately 90% Caucasian/white, 1% Asian, 3% two or more race categories and 6% unspecified. Thirteen percent of the students have I.E.P. plans for either reading, writing, math or speech/occupational therapy. Within the school there is one teacher per grade level, and one special education teacher for the school.

Table 1 gives specific demographic data on each of the three participants in the study. A convenience sample was used and there were three students who participated: one 6th grader and two 4th graders. The three students who participated in the intervention were already receiving specially designed instruction for reading in the resource room, and would have participated in the S.P.I.R.E. program anyway as part of that instruction. For that reason, informed consent was not needed. However, a research notice was sent home with students, informing families of the
details of the study. The students participated in this intervention during their regularly scheduled literacy block in the resource room. The intervention was scheduled to take place over a four week period from October 23rd through November 17th, 25-30 minutes a day, five days a week. There were however some disruptions to the planned intervention schedule, which is reflected in the limitations section of this report. The students who participated in the intervention, took an initial placement assessment to determine where they would start in the S.P.I.R.E. program. All three students started on Level 3 of S.P.I.R.E., which teaches nine common spelling patterns, including suffixes, which was the focus for this research study.

<table>
<thead>
<tr>
<th>Names have not been used to ensure confidentiality of the students</th>
<th>Grade Level</th>
<th>Age</th>
<th>Gender</th>
<th>Ethnicity</th>
</tr>
</thead>
<tbody>
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<td>10</td>
<td>M</td>
<td>Caucasian</td>
</tr>
<tr>
<td>Student B</td>
<td>4th</td>
<td>9</td>
<td>M</td>
<td>Caucasian</td>
</tr>
<tr>
<td>Student C</td>
<td>6th</td>
<td>12</td>
<td>F</td>
<td>Caucasian</td>
</tr>
</tbody>
</table>

*Table 1: Demographic information for students who participated in the SPIRE intervention program.*

Student A is a 4th grader who has a specific learning disability in the area of reading. His I.E.P. states that he should receive specially designed instruction for reading 40 minutes/day, 5 days a week, with a focus on decoding and fluency. According to his psychoeducational evaluation, this student struggles with phonological memory and visual memory, which makes it particularly difficult for him to remember the sounds letters make in order to sound out new words and read fluently. His academic strength is math. The reading goal stated in his current
I.E.P. is that he will “know and apply grade level phonics and word analysis skills in decoding words including multisyllabic words with at least 85% accuracy 8 out of 10 times.” He is currently reading at a level L according to a Fountas and Pinnell Benchmark, which is a mid 2nd grade reading level.

Student B, also a 4th grader, is a new student to the school. He has a specific learning disability in the areas of reading and math. He receives specially designed instruction in reading for 40 minutes/day, in-classroom support for math, and speech therapy twice a week for 30 minutes. According to evaluations in his current I.E.P., he is communication impaired and struggles with verbal comprehension, decoding, attention and executive functioning. He does however have a strong memory. The reading goal stated in his I.E.P. is that he will “read with fluency to build comprehension and encode/decode multisyllabic words.” He is also reading at a level L according to a Fountas and Pinnell Benchmark administered at the beginning of the school year.

Student C is a 6th grader who has a specific learning disability in the areas of reading, math and writing. According to psychoeducational evaluations, this student struggles with cognitive planning, decoding, fluency and written expression. She is however, strong in listening comprehension. This student receives specially designed instruction for reading, writing and math. The reading goal in her current I.E.P. states that she will “distinguish long from short vowel sounds in spoken single syllable words and show knowledge of final (e) and common vowel team conventions for representing long vowel sounds with 95% accuracy.” This student also struggles with letter reversal which makes it especially difficult for her to decode words and read fluently. She is currently reading at a Fountas and Pinnell Benchmark level L.
**Intervention**

The intervention I implemented for this study is called S.P.I.R.E. (Specialized Program Individualizing Reading Excellence). This intervention program was developed by Sheila Clark-Edmands M.S. Ed., and is based on the Orton-Gillingham approach to reading instruction. Orton-Gillingham is a multisensory phonics-based reading instruction program that was developed for dyslexic children and adults by neuropsychiatrist and pathologist Samuel Orton and teacher Anna Gillingham. Edmands, based S.P.I.R.E. on the Orton-Gillingham approach which reinforces all the skills recommended by the National Reading Panel: phonological awareness, phonics, fluency, vocabulary and comprehension (Balajthy, 2014, p. 1).

The S.P.I.R.E. intervention program is comprised of 10-step, daily lessons that teach and reinforce various phonics concepts in a sequential order. There are introductory lessons which introduce a new phonics concept and five reinforcement lessons to be used as needed. The ten steps in each lesson include auditory, visual, and kinesthetic learning modalities to help students learn and retain the concepts taught. Each lesson starts with teaching a new phonogram (a sound linked to a letter or letter combination) and a phonological awareness activity to help students retain new sounds (rhyming, segmenting, blending). This is followed by a word building activity with a magnetic board and letter tiles, decoding and sentence reading, and reading/reading comprehension activity. Finally, there is a dictation portion where students must write the letters for sounds, words and sentences dictated by the teacher. Also included with S.P.I.R.E. is an independent workbook which reinforces concepts through a variety of activities, as well as decodable readers which focus on specific phonics concepts.
Procedures & Data Collection

After approval for the research study had been given, the research notice was sent home to families and a copy was given to my administrator. I received no concerns or questions about the study, so I began the intervention (see complete research calendar in appendices). During the first week, I administered the decoding pre-assessment to gather baseline data on each student. The students were separated from each other during these assessments to limit distractions and ensure confidentiality. The same assessment was also administered post intervention to assess progress. The decoding assessments came from the S.P.I.R.E. program. Form A (see Appendix B) was administered at the beginning of the intervention and Form B (see Appendix C) at the end. The decoding assessments used, consisted of a list of words and phrases with a specific phonics pattern. The phonics pattern focused on for this study were words with suffixes (s, es, ing, er, est, en, ish, ly, y, ful, ness, less). The focus of the intervention was to teach students strategies to decode words with suffixes, and to help them understand that when a suffix is added to the end of a word it changes the meaning of that word.

In addition to the decoding pre-assessment, I also administered a one minute fluency drill (see Appendix D) to each student to gather a baseline. The S.P.I.R.E. program provides fluency drills for 4 of the suffixes taught, however I created my own fluency drill modeled after the S.P.I.R.E. examples that incorporated all 12 suffixes. I continued to administer the one minute fluency drill 2-3 times a week for the remaining weeks of the intervention to assess student growth.
During the second week of the intervention, I began teaching the three introductory lessons which introduced twelve common suffixes students may come across while reading. The suffixes were taught in groups of four, and once all twelve were introduced I taught three additional lessons to reinforce understanding. Throughout the intervention I also conducted Quick Checks from S.P.I.R.E. after each lesson had been taught (see Appendix E). Each lesson was split into two parts, so the Quick Checks were administered every other day. A Quick Check, similar to an exit slip, required students to read four words, two phrases, and two sentences that had suffixes. The data provided by the Quick Checks helped me to differentiate instruction and inform my teaching for the following day. It also helped me to evaluate the impacts of the S.P.I.R.E. program on student’s decoding accuracy.

Another data collection tool used throughout the intervention were running records (see Appendix I). Once a week, I conducted a running record on each student during small group guided reading lessons. The running records were conducted on a leveled book the student was reading at the time. I analyzed the running records to look for evidence that the students were applying what they had learned about suffixes, during real reading. The final running record was taken on a Decodable Reader from S.P.I.R.E. at the end of the intervention. The book had 19 words with suffixes that students had to decode. A percentage was calculated at the end of each running record to determine each student’s accuracy of reading words with suffixes.

At the end of the intervention a survey was administered to students by a professional colleague (see Appendix F). The survey questions were revised from the survey in the proposal, before administering to students. After a discussion with a colleague it was decided that the first version, which included a likert-scale, may have been too confusing for students. It was revised
to include five questions students had to either agree or disagree on, based on how they felt about S.P.I.R.E. The short answer question was also expanded, to include two short answer questions asking students about their favorite part of S.P.I.R.E. and what they found most challenging. This survey provided me with valuable information on the students’ perceptions of the intervention program.

Throughout the study I also kept a weekly journal of my observations, insights and questions about the intervention (see Appendix G). These journals were unstructured and helped me to document student progress and growth during the intervention. The journal also helped me to monitor levels of engagement during the lessons, while paying close attention to anything students may have said that indicated their thoughts about the S.P.I.R.E. program.

Validity of Data

In order to strengthen the validity of the research design, data was collected and triangulated for each sub question before conclusions were made about the impacts of phonics intervention. Data collection tools were carefully chosen to provide the necessary information to answer each sub question in the research study. Prior to conducting the intervention, I used the S.P.I.R.E. program with struggling students in the resource room. However, I hadn’t implemented it with much fidelity. Bits and pieces of the program were used but not in a consistent manner. In the weeks before the intervention, I spent time carefully reading the S.P.I.R.E. training manual that was provided to me by the special education teacher. I familiarized myself with the ways in which each part of the daily lessons should be taught, and
how to best use the assessment tools that were included in the program. I believe this helped to increase the validity of the data that was collected as a result of the intervention.

As an Ed Tech working in special education, I have also attended multiple trainings on conducting running records and analyzing data from them. This helped me ensure the validity of the data that I collected from the running records. Another way to increase the validity of the data collected during running records, and decoding assessments would have been to have a colleague administer the assessments. This was not an option though, because there simply wasn’t someone else available. I was however able to increase the validity of data collected through the student survey. I had a colleague administer the survey to students so students wouldn’t feel pressured to answer a certain way because I was there. She also discussed each question with students prior to administering the survey to make sure they understood them. In addition, she read each question to the students, so there was no confusion on what the question said.

Findings

The main question of this action research study was: What are the impacts of explicit, systematic phonics instruction in small groups on the areas of decoding and reading fluency for students with a specific learning disability in reading? This question was answered by a series of sub questions, each of which will be discussed in this section. In the proposal the first two sub questions asked: What are the impacts on rates of growth on decoding accuracy? And, what are the impacts on rates of growth on reading fluency? However, it was decided that there was not enough information about rates of growth prior to the intervention to answer those questions. As
a result, they were changed to: What are the impacts on decoding? And, what are the impacts on reading fluency?

The first sub question looked at the impacts of phonics instruction on the decoding accuracy of students with reading disabilities. This question was addressed by analyzing the data from the pre and post decoding assessments (Figure 1) as well as data from running records (Figure 3). The three students who participated in this intervention all showed growth from the beginning of the intervention to the end, as evidenced by data collected on the decoding assessments. The data from running records also showed high accuracy scores across the intervention timeline. On the decoding pre-assessment, Student A scored a 57%, reading 17 out of 30 words with suffixes correctly. At the end of the intervention Student A scored a 90%, reading 27 out of 30 words correctly. During running records this student’s average accuracy score was 93%. Student B read 23 out of 30 words correctly, scoring a 77% on the decoding pre-assessment. At the end of the intervention Student B increased his accuracy rate to 100%. This student's average accuracy rate on running records was 99%. Finally, Student C scored a 60% on the pre-assessment, reading 18 out of 30 words correctly. At the end of the intervention Student C scored a 97%, reading 29 out of 30 words with suffixes correctly. Her average accuracy rate on running records was 74%. I was only able to conduct 3 running records on Student C because she was absent one day and there was not time to make it up.
The second sub question looked at the impacts of phonics instruction on the reading fluency of students with reading disabilities. Reading fluency was assessed through timed one-minute fluency drills, shown in Figure 2, as well as observation of fluency rates on running records. On the one minute fluency drills, Student A increased his words read per minute from 11 at the start of the intervention to 39 at the end of the intervention. Student B also showed growth in words read per minute, he increased his words read per minute from 27 to 46. Student C showed the most significant growth in words read per minute, starting with 6 and ending with 32. The number of words read per minute on the fluency drills can be seen in Figure 2. Each student increased their words read per minute throughout the intervention which indicates that phonics instruction, using the S.P.I.R.E. program, had positive impact on reading fluency.
Reading fluency was also tracked during running records and students were rated on a scale of 0-3 based on the Fountas and Pinnell Benchmark System Fluency Scale (see Appendix H). Student A scored in the 2-3 range for each running record, Student B was also between 2-3. Student C struggled with fluency the most and often scored a 1-2. Assessing reading fluency using a this scale tends to be rather subjective, therefore it may not have been an adequate measure of fluency for this intervention.

**Figure 2: Words read per minute during timed fluency drills**

The third sub question in this research study, addressed whether students would be able to transfer what they learned in phonics instruction to real reading: This means not just applying phonics rules in isolation, but applying them in the context of a book they are reading outside of phonics instruction. This was measured by analyzing accuracy rates during running records, with
a specific focus on words with suffixes. After the running records were conducted, they were analyzed carefully to look for the number of words that contained suffixes, then a percentage was calculated based on how many of those words the student read correctly. These percentages are displayed on the graph in Figure 3. The running records were conducted once a week on each of the students that participated in the intervention, resulting in a total of 4 running records for each student. The only exception to this was during week one, when Student C was absent the day the running records were conducted and it was not able to be made up. Student A’s average accuracy rate was 93% at the end of the intervention. Student B averaged 99%, and Student C averaged 74%.

Accuracy scores were lower overall on the final running record. One reason for this may have been because the story contained more suffixes than the other stories used for running records. Transfer of skills learned during phonics instruction appeared to be easier for two of the students who participated in the intervention (Student A & B). Student C had a more difficult time transferring her skills to real reading. This does not surprise me about this student, as I have worked with her before and she often has a hard time transferring skills learned in phonics instruction to her reading. It is difficult to determine from this data, whether students were able to to decode words with suffixes using what they learned during phonics instruction, or if they were using context clues, or even a combination of the two.
The fourth sub question in this research study, focused on student’s perceptions of the S.P.I.R.E. program; what they liked about it, what they found challenging and whether they believe it helped them with decoding and fluency. Data on students perceptions was collected using a survey completed by each of the three students, and by analyzing entries in the teacher journal at the end of the intervention. The results of the survey indicated that 100% of the students agreed that they liked participating in the S.P.I.R.E. program. One hundred percent of the students also agreed that it made them a better reader and speller. Finally, 100% agreed that it helped them sound out words with suffixes, and that they understand more about words with suffixes as a result of phonics instruction using S.P.I.R.E.
The results of the short answer questions on the survey (Table 2) revealed that two of the three students enjoyed the spelling portion of S.P.I.R.E. because, “It was fun and easy” and “It is like a test.” One student liked reading the short stories in S.P.I.R.E., because if they had trouble the teacher would help them. On the second short answer question, students wrote about what was challenging for them. Two students responded that “reading the words” was the hardest part and one student said it was spelling. This data correlates with what was recorded in the teacher journals about the student’s perceptions while participating in S.P.I.R.E. During the week of 10/27/17 it was recorded that, “The students seem to be enjoying the S.P.I.R.E. program and I have even heard them state that it is making them a better speller!” Similarly during the week of 11/3/17 the teacher journal read, “The students have been showing excitement and enthusiasm while doing the spelling portion of the lesson. I give them the word, wait for them to write it down, then I write it on the board so they can check themselves. They like to compete with each other and keep track of how many they get correct. This is usually the most lively part of the lesson.” Both of these entries, along with the responses to the survey, indicate that the students had positive experiences while participating in the S.P.I.R.E. program.

<table>
<thead>
<tr>
<th>What was your favorite part of S.P.I.R.E. and why?</th>
<th>What part of S.P.I.R.E. was the most challenging for you and why?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Response #1</td>
<td>“I liked spelling the words because it was fun and easy.”</td>
</tr>
<tr>
<td>Response #2</td>
<td>“It was the stories. It was fun to read them if I had trouble Mrs. Hingston helped me.”</td>
</tr>
</tbody>
</table>
Table 2: Short answer responses to Student Survey (spelling was edited to make it easier to read and understand)

<table>
<thead>
<tr>
<th>Limitations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Although the results of this study indicated positive growth among the participants, it was not without its limitations. The first, and major limitation was the sample size. There were only three participants in this study which makes the impacts of the intervention less generalizable. Had there been a larger, more diverse sample, the impacts may have differed and yielded less desirable results. The second limitation was the time frame during which the intervention took place. The intervention was scheduled to run for 4 weeks, October 23rd through November 17th, with final assessments being given November 20th and 21st. Had the intervention been carried out for a longer period of time, it may also have revealed different results. Other limitations to this study were interruptions to the schedule. On October 25th the school was having a “Safety Day” so there was a lockdown drill in the middle of that day’s lesson. It was difficult for students to get back on track, so the lesson had to be repeated and carried over to the following day. During the second week of the intervention, there was a power outage and school was canceled for two days. This interrupted the flow of lessons and affected the intervention schedule. In order to gather all data before the Thanksgiving break, the intervention had to be cut short, and final assessments were administered the 16th of November. Class was not held the 17th, due to a Thanksgiving celebration happening at the school. S.P.I.R.E. recommends that</td>
</tr>
</tbody>
</table>
each lesson be 60 minutes long. I chose to split the lessons into two parts because the intervention time each day was only 30 minutes. This resulted in only three of the four reinforcement lessons being taught in the time frame allowed. However, this shouldn’t have affected the results, because according to the S.P.I.R.E. training manual, not all reinforcement lessons are necessary if students are making adequate progress.

**Recommendations/ Implementations**

This action research study examined the impacts of explicit, systematic phonics instruction on decoding and fluency of students with a specific reading disability. The intervention (S.P.I.R.E.) that was implemented during the study provided students with explicit, systematic phonics instruction that includes all of the major elements necessary for a balanced phonics program, in an easy to follow format. All three students showed significant growth in decoding as evidenced by data collected on the pre and post-assessments. The S.P.I.R.E. program also increased fluency scores among the three students who participated. Additionally the students enjoyed participating in the S.P.I.R.E. program and believed that it helped improve their reading skills, as evidenced by data collected by the survey administered at the end of the intervention. The results of this study are consistent with those found in the reviewed literature, indicating that phonics instruction does have positive impacts on the decoding and reading fluency, and is a necessary component of a well balanced reading program.

The results of this action research study indicate that the S.P.I.R.E. program, when implemented with fidelity, does result in growth in decoding and fluency for students who have a disability in reading. As a result of these findings it is recommended that S.P.I.R.E. continue to
be used with students who have a reading disability and need instruction in the area of phonics. When implemented accurately and consistently, this program is shown to increase decoding accuracy and reading fluency- as evidenced by this action research study. Further research is needed to see the impacts on decoding and fluency over a longer period of time using the S.P.I.R.E. intervention program. It is also recommended that this program be implemented with a larger, more diverse sample size. In a future research study I would like to ask the question: What are the impacts of phonics instruction on comprehension? It is often thought that a high decoding accuracy and fluency scores result in better comprehension, however that it not always the case. The participants in this study did not struggle with comprehension, but I am interested in seeing whether improved decoding and fluency can have an impact on comprehension.

The results of this study will be shared with the teaching staff at the school where the research took place. More specifically I plan on sharing the results with the special education teacher and administrator, in hopes that we will continue to use S.P.I.R.E. as a phonics intervention program with our students who have reading disabilities. It is also possible that teachers of students without reading disabilities may be interested in using S.P.I.R.E. as a phonics instruction program. I have noticed there is a lack of consistency among the regular education classrooms with what is used for phonics instruction, and S.P.I.R.E. may help to fill the gaps. Updated materials for each level of S.P.I.R.E. are also needed in order to provide students with the best instruction possible.
References


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**Appendices**

**Appendix A: Research Notice**

October 18, 2017

Dear Students and Families,

My name is Marina Hingston and I am sending this letter to inform you of a study I am conducting for my master’s program at the University of Southern Maine. The purpose of my study is to evaluate the use of the S.P.I.R.E. intervention program with students who have a specific learning disability in the area of reading. You have received this letter because I plan to collect data in your child's class.

My study will be conducted October 23th through November 10th, and will NOT include any activities outside of normal, day-to-day classroom activities. As part of my study, your child will participate in daily lessons from the S.P.I.R.E. program that will focus on specific phonics patterns. I will be looking at both academic achievement and student perceptions’ of the
program. For this study, I plan to use decoding assessments, fluency drills, running records, and a student survey as part of my data collection.

Please understand the following regarding your child’s participation in my study:

- Your child will not be video or audio recorded at any time.
- The records of this study will be kept private.
- Any sort of report I write will not include your child’s name, or anyone else’s.
- Pseudonyms for our school and district will also be used.
- Research records will be kept in password protected files.
- Records will be destroyed within a year.

The intent of my research is to learn more about a teaching practice that can positively impact how students do their own research. If you have any questions or concerns about my study, please feel free to contact me at 207-563-3437, or by email: mhingston@aos93.org

Sincerely,

Marina Hingston

Appendix B: Decoding Pre-Assessment
### Appendix C: Decoding Post-Assessment

<table>
<thead>
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<th>Form A</th>
</tr>
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<td>backs  matches  slashing  faster  smallest</td>
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<tr>
<td>sadly  coldish  playful  sadness  lifeless</td>
</tr>
<tr>
<td>willingly  flags  boxes  passing  thicker</td>
</tr>
<tr>
<td>wildest  boldly  sandy  helpful  homeless</td>
</tr>
</tbody>
</table>

I am a wishful thinker.

She is selfish and talks endlessly!

Thanks for your kindness.

My mom is lengthening all my dresses.

These boxers are the smallest dogs we have.
Form B

melt  inches  licking  smaller  mildest

gladly  fluff  helpful  kindness  useless

redness  desks  munches  flying  singer

oldest  sickly  crunchy  willful  homeless

My helper will gladly pack the dishes.

With sadness he said, “The sickly dog is lifeless.”

Strengthen your legs by walking up that hilly path.
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<tr>
<td>running</td>
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<td>thinnest</td>
<td>strongest</td>
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<tr>
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<td>kindness</td>
<td>gladness</td>
<td>richness</td>
<td>blindness</td>
</tr>
</tbody>
</table>

S.P.I.R.E. Concept Mastery Fluency Drill: s, es, ing, est, er, en, ish, ly, y, ful, less, ness
5 words per row/ 12 rows/ 60 words

Appendix E: Quick Checks (example)
Appendix F: Student Survey

S.P.I.R.E. Student Survey
Part 1: Write your answers to the following questions:

What was your favorite part of S.P.I.R.E. and why?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

What part of S.P.I.R.E. was the most challenging for you and why?
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

Part 2:
Directions: Please circle agree or disagree to tell how you feel about S.P.I.R.E.
1.) I liked participating in S.P.I.R.E.

   Agree               Disagree

2.) S.P.I.R.E. has helped me to sound out words with suffixes.

   Agree               Disagree

3.) I understand more about words with suffixes because of S.P.I.R.E.

   Agree               Disagree

4.) S.P.I.R.E. has helped me become a better reader.

   Agree               Disagree

5.) S.P.I.R.E. has helped me become a better speller.

   Agree               Disagree

Appendix G: Teacher Journal

Codes: Student perceptions and feeling about S.P.I.R.E.
10/20/17-
This week I sent out the Research Notification, I didn’t receive any questions from the families about my action research. I spent the later part of the week administering the decoding and fluency pre-assessments to all three students. Student A struggled the most with the decoding assessment, he read 57% of the words correctly. Student B performed the best, scoring a 77% and Student C scored 60%. According to the S.P.I.R.E. assessment handbook, students who demonstrate at least 80% accuracy on the decoding pre-assessment can move on to the next skill. These pre-assessments show that each student needs instruction around reading words with suffixes, with Student B needed the least work and Student A needing the most. I am anxious to see how much each student improves at the end of the intervention.

When I administered the fluency assessment the scores were slightly different. Again, student B performed the best reading 27 words/minute. Student A read 11 words/minute, and Student C read 6 words/minute. Student C was feeling frustrated/upset on this day so I believe that may have impacted her fluency rate. I will be interested in seeing how her score changes the next time I administer a fluency assessment.

10/27/17-
This week I started the Introductory lessons for the suffixes. After a little instruction, the students were easily able to separate the root word from the suffix and were successful at identifying what the word meant with and without the suffix. Student C had the most difficult
time decoding the words through most of the lessons. We had an interruption on the third day with a lockdown drill, this set me back a little. I tried doing part of a lesson after that, but was not very successful. It was a rainy day and the students were very silly.

I also conducted two Quick Checks and two fluency drills this week. I am starting to see real growth on their fluency drills! I did a running record with Students A and B. They both did an excellent job decoding words with suffixes. Student B read 4 out of 4 words with suffixes correctly. Student A read 5 out of 6 words with suffixes correctly. I hope that this means their learning is transferring to their reading!

The students seem to be enjoying the S.P.I.R.E. program and I have even heard them state that it is making them a better speller! I have never taught it to a group of 3 before or implemented it with such fidelity. I hope to continue to see positive results!

11/2/17-
Monday and Tuesday were “snow days” because of no power. I was also out of school on Wednesday so no instruction happened. Thursday I taught the second half of the introductory lesson for suffixes (y, less, ful, ness) however, we got interrupted and didn’t finish the lesson. I was able to grab the students later in the day to conduct a Quick Check, which all three students did very well on, and I am seeing growth from where they started. The students are seeing it too! Tomorrow I will finish the rest of the lesson and do another fluency drill. I am hoping to get back on track next week.

11/3/17- Today during guided reading time I conducted running records on all three students. Student A read 100% of the words with suffixes correctly. Student B also read 100% of the
words with suffixes correctly. Student C read 83% of the words with suffixes correctly. It is exciting to see them applying what they have learned to read reading! The students have been showing excitement and enthusiasm while doing the spelling portion of the lesson. I give them the word, wait for them to write it down, then I write it on the board so they can check themselves. They like to compete with each other and keep track of how many they get correct. This is usually the most lively part of the lesson.

11/9/17-

This week was better as far as being on track with my schedule. I taught the first two reinforcement lessons for suffixes. I have created two spreadsheets with data from the fluency drills and quick checks. I have also played around with the graphs and created two graphs that represent the data for each tool- it is interesting to see the data displayed this way! It is clear that all three students are making consistent growth on the fluency drills. The data from the quick checks have not been as consistent. Student B has been staying around 90-100% accuracy, and student A 80-100% accuracy. Student C has not been showing consistent growth- her numbers tend to jump and dip depending on the day. She does struggle more in general with reading than the other two students however. I have worked with this student in the past and this is typical for her progress, much of it depends on the day and how much work she is willing to put in.

I have done a running record on each student this week and the students are showing excellent skills sounding out words with suffixes in the context of what they are reading. I can’t wait to see how they do on the final decoding assessment and running record.
After looking over my student survey, talking with a colleague and thinking more about the students I am working with, I have decided to revise the questions. The new version can be found here. I changed the likert scale to just agree or disagree in order to simplify it. I also changed the short response question from what did you like/not like, to what was your favorite part and the most challenging part for you?

11/15/17-

This week I finished up the final S.P.I.R.E. lesson and conducted the post decoding assessment, another fluency drill and had a colleague administer the student survey. I was very pleased with the results of the post assessment. Each student showed significant improvement over the pre assessment. Student A grew by 58%, Student B by 30% and Student C by 62%!

The results of the student survey were also positive. The students all chose agree on each question in part two of the survey. This doesn’t really surprise me because they have been very positive throughout the intervention. In part one, students had to write about their favorite part of S.P.I.R.E. Two students said they liked the spelling portion, and one student said they liked reading the words and stories. They also had to write about the most challenging part of S.P.I.R.E. One student said the spelling was the most challenging part, and two students said reading the words was the most challenging.

Appendix H: Fluency Scale
Appendix I: Running Record Data/ Observations

<table>
<thead>
<tr>
<th>Date</th>
<th>10/26/17</th>
<th>11/2/17</th>
<th>11/9/17</th>
<th>11/16/17</th>
</tr>
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</table>

**Fluency Scoring Key**

0. Reads primarily word-by-word with occasional but infrequent or inappropriate phrasing; no smooth or expressive interpretation, irregular pausing, and no attention to author’s meaning or punctuation; no stress or inappropriate stress, and slow rate.

1. Reads primarily in two-word phrases with some three- and four-word groups and some word-by-word reading; almost no smooth, expressive interpretation or pausing guided by author’s meaning and punctuation; almost no stress or inappropriate stress, with slow rate most of the time.

2. Reads primarily in three- or four-word phrase groups; some smooth, expressive interpretation and pausing guided by author’s meaning and punctuation; mostly appropriate stress and rate with some slowdowns.

3. Reads primarily in larger, meaningful phrases or word groups; mostly smooth, expressive interpretation and pausing, guided by author’s meaning and punctuation; appropriate stress and rate with only a few slowdowns.
| Student A: | This student was able to read 5 out of 6 words with suffixes correctly during the running record. He missed the word *scratching*—he had trouble sounding out the root word.  
**Accuracy:** 83%  
**Fluency:** 2 | During the running record today, this student was able to read 6 out of 6 words with suffixes correctly. I have noticed that reading words in context is easier for this student. He is able to use what is happening in the story to figure out unknown words. He also moved up in a reading level today!  
**Accuracy:** 100%  
**Fluency:** 2 | This student read 9 out of 9 words with suffixes correctly today. He even said “Hey it’s foxes-- we’ve been working on words with -es at the end!”  
I love that they are noticing letter patterns we are working on in their reading  
**Accuracy:** 100%  
**Fluency:** 3 | During this final running record the Decodable Reader from S.P.I.R.E. - which is a short book that contains 19 words with suffixes this student read 17 out of 19 words with suffixes correctly scoring a 89%.  
The student was confident while reading and sounded out most of the words with suffixes with no problem.  
**Accuracy:** 89%  
**Fluency:** 3 |
| Student B: | This student was able to read 4 out of 4 words with suffixes correctly during the running record. He was easily able to separate the root word from the suffix to sound out the words.  
**Accuracy:** 100%  
**Fluency:** 2 | During this running record the student was able to read 6 out of 6 words with suffixes correctly. He also moved up in a reading level today!  
**Accuracy:** 100%  
**Fluency:** 2 | He read 7 out of 7 words with suffixes correctly.  
**Accuracy:** 100%  
**Fluency:** 2 | During this final running record the Decodable Reader from S.P.I.R.E. - which is a short book that contains 19 words with suffixes this student read 18 out of 19 words with suffixes correctly scoring a 95%.  
This student claimed that the |
<table>
<thead>
<tr>
<th>Student C:</th>
<th>This student was absent the day I was planning on doing a running record. I have however noticed in her reading, that she is using what we have learned about separating the base word from the suffix to sound out the word--- she still needs help to separate the word though.</th>
</tr>
</thead>
<tbody>
<tr>
<td>During the running record today this student was able to read 5 out of 6 words with suffixes correctly. She is able to use context clues to figure out unknown words.</td>
<td>This student read 4 out of 6 words with suffixes correctly. She had trouble with <em>healthy</em> and <em>matching</em></td>
</tr>
<tr>
<td>Accuracy: 83% Fluency: 1</td>
<td>Accuracy: 66% Fluency: 2</td>
</tr>
<tr>
<td>During this final running record the Decodable Reader from S.P.I.R.E. - which is a short book that contains 19 words with suffixes this student read 14 out of 19 words with suffixes correctly scoring a 74%. This student also stated that the book was “Easy” and only struggled with a few of the words with suffixes.</td>
<td>Accuray: 74% Fluency: 2</td>
</tr>
</tbody>
</table>
Appendix K: Sample of Running Record

S.P.I.R.E. Student Survey

Part I: Write your answers to the following questions:

What was your favorite part of S.P.I.R.E. and why?

I liked spelling the word because it was fun and easy.

What part of S.P.I.R.E. was the most challenging for you and why?

Reading is the most challenging because I didn't know some.
Appendix L: Sample of Quick Check Assessment

Jim rubs the lamp. “I wish I was a singer,” Jim says. “I wish I had lots of cash. And I wish that I was a baseball player.”

Time passes.

“This lamp does not give wishes!” Jim says.

“This is hopeless,” Jim says.

“I did not get my wishes.”

Jim puts the lamp into the trash.
It was coldish, and Tim was sadly hatless. The frisky dog yelped with gladness when Kim came home.

Pete bravely tossed the coldest water. Who goes to the rocky shore to pick up shells?
Appendix M: Sample of pre-assessment

Form A

docks backs matches slashing smallest
sadly coldish playful sadness lifeless
willingly flags boxes passing thicker
wildest boldly sandy helpful homeless

I am a wishful thinker.
She is selfish and talks endlessly!

Thanks for your kindness.
My mom is lengthening all my dresses.

These boxers are the smallest dogs we have.

Decoding Assessments: suffixes
S.P.I.R.E.® Level 3 © SS1 • May Be Duplicated
Appendix N: Sample of post-assessment

Form B

melts    inches    licking    smaller    mildest

gladly    fluffy    helpful    kindness    useless

redness    desks    munches    flying    singer

oldest    sickly    crunchy    willful    homeless

My helper will gladly pack the dishes.

With sadness he said, "The sickly dog is lifeless."

Strengthen your legs by walking up that hilly path.
### Appendix O: Sample of Fluency Drill

<table>
<thead>
<tr>
<th>bats</th>
<th>hats</th>
<th>pants</th>
<th>mats</th>
<th>dogs</th>
</tr>
</thead>
<tbody>
<tr>
<td>matches</td>
<td>pitches</td>
<td>foxes</td>
<td>lunches</td>
<td>bunches</td>
</tr>
<tr>
<td>running</td>
<td>camping</td>
<td>ringing</td>
<td>giving</td>
<td>standing</td>
</tr>
<tr>
<td>fastest</td>
<td>biggest</td>
<td>fattest</td>
<td>thinnest</td>
<td>strongest</td>
</tr>
<tr>
<td>thicker</td>
<td>camper</td>
<td>thinker</td>
<td>smaller</td>
<td>singer</td>
</tr>
<tr>
<td>dampen</td>
<td>golden</td>
<td>thicken</td>
<td>fatten</td>
<td>rotten</td>
</tr>
<tr>
<td>grayish</td>
<td>ticklish</td>
<td>foolish</td>
<td>oldish</td>
<td>selfish</td>
</tr>
<tr>
<td>softly</td>
<td>safely</td>
<td>bravely</td>
<td>mostly</td>
<td>boldly</td>
</tr>
<tr>
<td>windy</td>
<td>clingy</td>
<td>risky</td>
<td>sandy</td>
<td>lumpy</td>
</tr>
<tr>
<td>helpful</td>
<td>playful</td>
<td>wishful</td>
<td>mindful</td>
<td>restful</td>
</tr>
<tr>
<td>thankless</td>
<td>homeless</td>
<td>lifeless</td>
<td>timeless</td>
<td>childless</td>
</tr>
<tr>
<td>sadness</td>
<td>kindness</td>
<td>gladness</td>
<td>richness</td>
<td>blindness</td>
</tr>
</tbody>
</table>

P.I.R.E. Concept Mastery Fluency Drill: s, es, ing, est, er, en, ish, ly, y, ful, less, ness
Words per row: 12 rows/60 words
## Appendix P: Research Calendar

### October/ November 2017

<table>
<thead>
<tr>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
</tr>
</thead>
<tbody>
<tr>
<td>16</td>
<td>Gather/ Prepare Materials</td>
<td>18 Gather/ Prepare Materials</td>
<td>19 *Administered decoding pre-assessment</td>
<td>20 *Administered decoding pre-assessment</td>
</tr>
<tr>
<td></td>
<td>Send home Research Notice</td>
<td>*Fluency Drill (baseline)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>23</td>
<td>Introductory Lesson 1- part 1: (suffixes: s, es, ing, er)</td>
<td>24 Introductory Lesson 1- part 2</td>
<td>25 Introductory Lesson 2- part 1 (suffixes: est, en, ish, ly)</td>
<td>26 Introductory Lesson 2- Reviewed part 1 and finished part 2</td>
</tr>
<tr>
<td></td>
<td>*Quick Check</td>
<td>*Fluency Drill</td>
<td>*Quick Check</td>
<td>*Quick Check</td>
</tr>
<tr>
<td></td>
<td></td>
<td>** Lockdown Drill</td>
<td>** Running Records</td>
<td>** Running Records</td>
</tr>
<tr>
<td>30</td>
<td>No School (Power Outage)</td>
<td>31 No School (Power Outage)</td>
<td>1 Researcher was out of the building</td>
<td>3 Reinforcement Lesson 1- part 1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>*Quick Check</td>
<td>*Fluency Drill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>** Running Records</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Reinforcement Lesson 1- part 2</td>
<td>7 Reinforcement Lesson 2- part 1</td>
<td>8 Reinforcement Lesson 2- part 2</td>
<td>9 Reinforcement Lesson 3- part 1</td>
</tr>
<tr>
<td></td>
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<td></td>
<td></td>
<td>10 No School (Veterans Day)</td>
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<tr>
<td></td>
<td>*Quick Check</td>
<td>*Fluency Drill</td>
<td>*Fluency Drill</td>
<td>*Quick Check</td>
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<tr>
<td>13</td>
<td>Reinforcement Lesson 3- part 2</td>
<td>14 Reviewed the 12 Suffixes</td>
<td>15 Administered decoding post-assessment</td>
<td>16 *Colleague administered student survey</td>
</tr>
<tr>
<td></td>
<td>*Fluency Drill (Final)</td>
<td></td>
<td>**Running records on Decodable Reader from S.P.I.R.E.</td>
<td>**Running records on Decodable Reader from S.P.I.R.E.</td>
</tr>
<tr>
<td>17</td>
<td>No Class (School Celebration)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>