Impact of Classroom-Based Fluency Instruction on Grade One Students in an Urban Elementary School

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Abstract: The present exploratory study examined the effect of the implementation of a reading fluency instruction protocol on the reading performance of early first grade students in an urban school. Previous research has tended to examine the effects of fluency instruction after students have achieved some degree of competency in word recognition, usually toward the end of first grade and beyond. The fluency instruction provided in this study included repeated and assisted reading and was delivered daily over a ten-week period in the first semester of the school year by classroom teachers. The reading performance of students in the fluency instruction group (n = 51) was compared with a comparable group of first grade students (n = 27) who did not receive the fluency instruction, though the total number of minutes devoted to daily reading instruction and home reading was equal between groups. Descriptive analyses of pre- and post-testing data suggest that the first grade students receiving the fluency instruction made substantive, but not statistically significant, gains in reading achievement over the comparison group of students not receiving fluency instruction. The results suggest that dedicated and systematic fluency instruction may be appropriate for students before high levels of word decoding are achieved and that fluency instruction may be an effective instructional protocol as early as the beginning of first grade. Given the acknowledged limitations, including small sample size, further research into fluency instruction in early first grade is recommended.

Keywords: reading; fluency; fluency development lesson; comprehension; academic achievement

1. Introduction

Lack of adequate progress in reading achievement among elementary grade students in the United States continues to be a major concern. The most recent (2019) National Assessment of Educational Progress (NAEP) [1] reported that 34% of children entering kindergarten are lacking in basic language skills that promote reading acquisition and 64% of fourth graders read below grade level. Moreover, these statistics have not changed substantially over the past 25 years. This stagnation in reading growth leads to a probable conclusion that instructional factors that promote early reading development are either missing or are receiving less-than-optimal emphases in many curricular reading programs.
This is not a new idea, that something of extreme importance is missing in our reading instructional programs to promote and support foundational reading development. Allington [2] proposed that a viable reason for so many students struggling in reading is that they are not fluent readers and fluency is often a relatively neglected component in reading instruction curricula and instructional protocols. He claimed that the ability to read with ease and expression, that is reading fluency, is often observed as lacking in struggling readers. Furthermore, fluency is essential to competent reading and that reading educators, curriculum developers, and policy makers should make it an integral part of their theoretical models of reading and reading curricula in the elementary grades.

The theoretical underpinnings to fluency lie in the work of LaBerge and Samuels’ [3] theory of automatic information processing in reading, Logan’s [4] instance theory of automatization, and Perfetti’s [5] verbal efficiency model of reading. LaBerge and Samuels posit that reading is a multi-task activity. Two of the major tasks in the act of reading are word recognition and comprehension. They also argue that readers have a limited amount of attentional or cognitive resources. When readers have to employ a large amount of their attentional resources to the word identification reading task, they have less available for comprehension. As a result, comprehension suffers. The solution to this problem is to automatize word recognition. By automaticity, LaBerge and Samuels mean the ability to recognize most words instantly and effortlessly in the way that most proficient readers do. By minimizing the amount of attentional resources required for word recognition, readers can then apply those resources to comprehension. Stanovich [6] further elaborated on the LaBerge and Samuels theory by suggesting that difficulty, or a lack of fluency, in reading could be explained by a lack of automaticity in the bottom-up word decoding process, which restricted those readers in employing their cognitive resources for the more cognitive demanding top-down reading comprehension process.

A complementary theoretical perspective on fluency comes from work in the prosodic components found in oral reading [7–12]. This perspective suggests that reading fluency is achieved when readers are able to embed in their oral reading prosody or expression that reflects syntactic and semantic aspects of the text being read. Confirmatory research has subsequently found that prosody is associated with proficient reading [13–17].

Reading fluency has since been accepted as a key competency in reading development and instruction as suggested by the Report of the National Reading Panel [18], comprehensive reviews of reading fluency [19–23] and in policy documents in the United States such as the Common Core State Standards [24].

Despite this seeming consensus about the importance of fluency, it continues to receive somewhat limited emphasis in actual reading instructional protocols in the United States [25]. Rasinski [26] notes that in the annual “What’s Hot” survey of reading scholars, reading fluency has consistently been identified as a “not hot” topic. Moreover, these same scholars report that reading fluency does not deserve to be a hot topic. Indeed, in the most recent survey [27] reading fluency was not even included.

Rasinski [26] suggests that there are several reasons for the limited emphasis on fluency instruction in reading curricula. Fluency is most often associated primarily with oral, not silent, reading and automatic word recognition is often mischaracterized as reading fast. Moreover, there is a widespread view that it is a competency that is only important in the primary grades. Another inaccurate view of fluency is the dissociation of it with reading comprehension, which of course is the ultimate goal of reading. Each of these characterizations is incorrect; reading fluency is indeed an essential piece for proficient reading, ranging from foundational skills through competent reading. Investigations of reading in the early 20th century [28] recognized that fluency enables the mind of the reader to move from a text level focus to a meaning level focus. Fluency promotes increasingly efficient (automatic) word identification that allows the reader to devote more cognitive resources to comprehension [29,30]. Still, a prevailing attitude in many reading instructional programs is that fluency does not deserve high status among priorities in teaching reading.
2. Defining Fluency

As mentioned earlier, fluency in reading is a complex competency, made up of two distinct sub-competencies. One sub-competency is word recognition automaticity, which refers to the ability of readers to instantly recognize written words and phrases, with minimum cognitive effort. The significance of this competency is that with automaticity readers are able to reserve their finite cognitive resources for reading comprehension [4,31]. Word recognition automaticity is a problematic concept in that it is not the same as and can be confused with word recognition accuracy. Although a reader may be able to decode words accurately, this is not the same as decoding words automatically. A reader who is automatic in word recognition identifies words instantly from lexical memory without the need to apply cognitive resources for decoding [32,33]. Simply becoming proficient in phonics or word decoding is not sufficient for fluent reading. Such accurate readers often read in a slow and effortful manner that limits the amount of cognitive resources that can be devoted to comprehension. Literacy professionals who advocate phonics only for proficient reading miss the point that accuracy in word recognition is a necessary but still insufficient condition for accomplished reading. It is automaticity in word recognition that is the ultimate goal when it comes to word decoding and foundational reading competency [24]. Automaticity is typically assessed by speed of reading. Readers who read faster are assumed to be fast because they are able to recognize words automatically. A good deal of research has associated speed of reading with comprehension and overall reading achievement [19] and it has become a fairly common assessment tool in general reading instruction.

The second component of fluency is prosody or expression during oral reading [19,21,22,34]. Indeed, fluent speech is often characterized by the extent to which speakers are able to use prosodic or melodic elements of their voices to assist in communicating meaningful messages; in other words, their reading sounds like real language. Similarly, a reader’s use of prosody while reading orally provides evidence that the reader is monitoring and capturing the meaning of the written text. Prosody is normally assessed informally in a classroom setting by a teacher listening to the oral reading of a text and then rating the reading according to a descriptive rubric. Research on prosody has demonstrated that it is associated with comprehension and overall proficiency in reading [14,15,34–36].

3. Teaching Fluency

Since the automaticity component of fluency presupposes accuracy in word recognition, the conventional wisdom is that fluency instruction should normally occur at the same time, or subsequent to phonics instruction. Several scholars describe essential approaches to fluency instruction that include modeling fluent reading for students, assisted reading where a student reads a text while simultaneously hearing a fluent rendering of the same text, wide reading practice, dyad or paired reading, and deep or repeated reading practice where a student practices a text multiple times until the student’s reading reaches fluency [37–40].

A more intensive approach to fluency instruction involves integrating those separate elements describe above in a comprehensive lesson format. The Fluency Development Lesson (FDL) was developed as such an approach for students deemed at risk for fluency acquisition [37]. The FDL is a daily lesson that has as its goal fluent reading of a new text, usually a poem. In the FDL the teacher chooses a new brief text each day for students to practice to the point of fluency. Poems for children are ideal for this activity as their brevity along with the rhythm and rhyme in the poems make them easy for students to master. Two copies of each daily text are made for every student. A display copy is also provided for students to view and read as a group. Teachers select their daily poems from a variety of online resources and stocks of poems available in the school. Poems are selected based on their perceived interest to students and a general sense that the poems are in a readable range for students. More challenging poems could be selected with the understanding that students would require more support in order to achieve mastery of them.

The teacher begins each 20-minute FDL by reading with students the text mastered from the previous day. Then, focus changes to the new text where the teacher reads the text aloud to the
students two to three times while the students follow along silently. The teacher changes the manner in which they read in order to allow students to consider various styles or versions of oral reading. After the text is read aloud, the class engages in a brief discussion of the text and how it was actually read. Next, students read the text chorally two to three times, in various forms, along with the teacher. Again, the teacher creates variety by asking different groups of students to take the lead in the choral reading. Following choral reading, students work in groups of two or three to continue practicing the text. One student reads the text two to three times while the partner student follows along, provides assistance when necessary, and tells the reader what was liked about the reading; then the roles are reversed. During this portion of the lesson the teacher walks around the classroom coaching, supporting, and giving formative feedback to individuals and groups of students as needed while other students continue to rehearse. At this point in the lesson, students have read the daily text six to twelve times. In order to provide an incentive for that amount of practice, individual students and small groups are then asked to perform their text for their classmates, other classrooms, or other members of the school community. The focus of the performance is on prosodic and meaningful readings of the text.

Following the performance of the text by students, they are engaged in a brief word study activity. Eight to ten words from the text are chosen by the teacher and students. Students read the words in isolation and then engage in one of several word work activities, which include analyzing and expanding on rhymes found in words, word sorts, and word games.

The lesson ends with students archiving one of copy of the text in their folders. The other copy of text is sent home for additional practice with parents and family members. Parents are alerted prior to the implementation of the FDL about the importance and need for continued practice and repeated readings at home. They are encouraged to make a special effort to listen to their children read and provide positive feedback on their reading. The following day the FDL procedure is repeated with a new text.

Research has shown that multi-feature fluency interventions, such as the FDL, have been effective in improving various aspects of reading, including reading comprehension [19]. A meta-analysis by Stevens, Walker, and Vaughn [23] examined 19 studies between 2001 and 2014 on the impact of various fluency interventions on elementary-grade students experiencing learning difficulties. They concluded that repeated reading, assisted reading, and multi-feature interventions produced significant improvements in both students’ fluency and comprehension. Other studies employing specifically the FDL have demonstrated improvements in various reading competencies (word recognition accuracy, automaticity, prosody, and comprehension) for second graders [41], third graders [42], fourth graders [43], and students in a clinic reading intervention setting [44,45].

Phonology and explicit phonics instruction should be the primary focus of instructional activities for developing reading foundational skills in grade one [46–48] and it has been generally thought that fluency instruction should proceed after students have achieved some degree of competency in word recognition. Research has not generally focused on the effects of the use of the fluency instruction, including the FDL, in conjunction with foundational skills instruction. The present study examined the effects of the regular use of FDL in self-contained first grade classrooms. The study used a general reading growth measure to determine the effects of the FDL instruction.

4. Methods

4.1. Setting and Participants

The present study took place at a charter school located in the urban core of a large midwestern U.S. city, in what was once an industrial factory. Ninety-eight percent of the student body is non-white (89.5% African American, 5.4% Asian American, 1.6% Hispanic American, and 1.9% multiracial). Consent to participate in the FDL was given by parents. One hundred percent of the students received free lunch. Subjects for the study were students from three first-grade classrooms at the Village Prep.
School. Students in two of the classrooms \((n = 51)\) were identified as the treatment (FDL) group while students from the other classroom \((n = 27)\) were selected as a business-as-usual comparison group. Students had previously been randomly assigned to the three classrooms.

The impetus for the study came from the school principal and reading specialists who recognized that the demographics of the school population were likely to put students at risk for difficulties in reading. The principal and reading specialists were on the lookout for instructional innovations that might help students. The study, then, took place within an ecologically valid setting.

All elementary grade teachers in the school were provided with an overview of reading fluency, the FDL, and a demonstration of the FDL in practice. The total time for the training was 90 min. Although all teachers were trained in the FDL, teachers in the control or business-as-usual classroom agreed not to use it during the span of the study. The teachers who implemented the FDL were volunteers and indicated to the reading specialists a willingness to implement the FDL daily in their classrooms. The reading specialists regularly observed both the business-as-usual and FDL classrooms to ensure that the FDL was not part of the business-as-usual classroom and that the FDL was an integral part of the FDL classrooms.

4.2. Treatment

Each day all first-grade students received instruction in reading for 135 min from early October through mid-December (10 weeks). Students in the business-as-usual group received daily instruction in phonics (25 min), computer-based instruction (25 min) that included activities involving specific word decoding and comprehension competencies, independent reading of picture books (25 min), guided reading using authentic texts with teacher-led discussions (25 min), and standards-based reading instruction focused on discrete reading competencies found in the standards document issued by the state education agency (35 min). Fluency instruction was a tangential aspect of the business-as-usual (BAU) curriculum and occurred on an informal and irregular basis. That is, the teachers occasionally involved students in repeated and assisted reading activities; however, these were usually unplanned events that occurred irregularly. For example, realizing that students had difficulty with an assigned text, the teacher might ask students to read it a second time. Similarly, during regular guided reading instruction the BAU teacher may occasionally ask pairs or small groups of students to read a portion of a text chorally. In none of these instances was the fluency activity planned as part of a regular and systematic approach to fluency instruction.

For students in the FDL classrooms, phonics, computer instruction, independent reading, and guided reading were each reduced by 5 min, resulting in a 20-min daily period available for implementation of the FDL. Total time for reading instruction, then, was the same for both groups. In order for students to receive the FDL within the allotted and limited time, each Fluency Development Lesson was administered to the entire class (25 and 26 students respectively).

All students were asked to engage in a brief period of reading (10–15 min) at home. For the BAU students, parents were asked to read to their children and/or listen to them read passages that they had read at school or passages chosen for independent reading. In the FDL groups, students were asked specifically to engage in repeated oral readings or performances of the text from the daily Fluency Development Lesson to various members of their families.

5. Measures

All students were assessed by the school’s reading specialists prior to the beginning of the treatment and again in January at the end of the treatment using the Benchmark Assessment System (BAS) \([49]\). The BAS was chosen as it was the assessment system normally used by the school to measure students’ reading progress. The BAS is an individual formative reading assessment in which students are asked to orally read and respond, in a comprehension conversation with the examiner, to a series of graded texts. Data are gathered on students’ word recognition accuracy, fluency, and reading comprehension. The examiner uses the accumulated data to determine each student’s instructional
and independent reading levels. Reading levels are specified in alphabetical levels (Levels A through J for grades K-1). The BAS had been used in this school for more than five consecutive years.

A published study of reliability and validity reports that the texts used in the BAS are progressively more difficult and that approximately 80% of K-2 students’ reading performance of the graded texts followed the sequential hierarchical order. According to the Field Study of the Reliability and Validity of the Fountas and Pinnell Benchmark Assessment Systems 1 and 2 test–retest reliability for all BAS (0.94) levels ranges from 0.93 to 0.97. Convergent reliability indicated the BAS was highly predictive of Reading Recovery Assessments (0.94) and moderately predictive of the Slosson Word Test (0.69). The same study also reported a strong correlation ($r > 0.91$) between the BAS text levels and texts in the Reading Recovery Text Level Assessments [50]. Overall, the BAS is reported to be a valid and reliable means for assessing students’ reading levels.

6. Results

Table 1 shows the means and standard deviations by group for the October (pre) and December (post) assessments. Table 2 further describes the differences in performance by group. To determine if statistically significant differences occurred due to treatment, a repeated-measures analysis of variance (ANOVA) was conducted where the group composed the between-subject factor (BAU and FDL) and the BAS assessments for October and December formed the within-factor. Effect sizes for partial eta-square were interpreted using guidelines from Kirk (1996). Results from the multivariate test using Pillai’s Trace showed that all students made statistically significant gains, $F(1,68) = 67.37, p < 0.001, \eta^2 = 0.498$. The test for differences between groups was not significant, $F(1,68) = 0.179, p = 0.674$. However, the interaction test for simple effects (time-by-group) resulted in statistically significant results with large effects, $F(1,68) = 12.91, p = 0.001, \eta^2 = 0.160$. A closer look reveals a 0.14 difference in the pretest means of the two groups (treatment = 5.15 and control = 5.29) which an independent samples $t$-test showed to be a non-significant difference, $t(68) = 0.202, p = 0.841$. When the December means were compared for the BAU and FDL groups, a difference of 0.75 favoring the FDL group was found ($6.61 - 5.86 = 0.75$). This difference between the groups was more than six times greater in December than in October ($75 + 14 = 89/14 = 6.4$). While the BAU group showed a 13% increase between October and December ($5.86 - 5.29 = 0.67$), the FDL group showed a 28% increase ($6.61 - 5.15 = 1.46$), a result 2.2 times greater than the BAU group. Figure 1 graphs the results showing that while the two groups began at very similar starting points in October, the FDL group out-gained the BAU group.

<table>
<thead>
<tr>
<th>Group</th>
<th>Mean (sd)</th>
<th>Gain</th>
</tr>
</thead>
<tbody>
<tr>
<td>October FDL</td>
<td>5.02 (2.72)</td>
<td>+1.51</td>
</tr>
<tr>
<td>December FDL</td>
<td>6.53 (3.09)</td>
<td></td>
</tr>
<tr>
<td>October Control</td>
<td>5.29 (2.83)</td>
<td></td>
</tr>
<tr>
<td>December Control</td>
<td>5.86 (3.08)</td>
<td>+0.57</td>
</tr>
</tbody>
</table>

Table 2. Pre- and post-test differences by reader group.
7. Discussion

Recent reports in the public media [51,52] have argued that phonics (word recognition) instruction is a necessity for reading success and that current phonics instruction in American schools is inadequate. We agree that proficiency in word recognition accuracy is critical to reading success and that intentional and systematic instruction in phonics is required in grades kindergarten through two. However, mere accuracy in word recognition is insufficient for proficient reading. Given our understanding of the interplay between and cognitive requirements for word recognition and comprehension, the true goal for word recognition instruction should be automaticity in word decoding. For decoding skills to become automatic, fluency instruction that includes regular opportunities for repeated and assisted reading is recommended. Interestingly, neither of the previously mentioned public media articles advocating phonics instruction included reading fluency as a significant part of the recommended instruction or automatic word recognition as the ultimate foundational reading goal.

In Chall’s [29] stages of reading development, the foundational reading focus in Stage 1 is decoding and occurs in grades one and two. At Stage 2 the focus of foundational reading moves to fluency and occurs in grades two and three. While we agree with and support the trajectory of Chall’s model of word recognition accuracy, we argue that there is no reason why fluency cannot also be developed simultaneously in grades one and two. Perhaps Chall’s fluency stage of development may be more appropriately implemented earlier in students’ school careers (e.g., grades one–two) and lead to an acceleration in students’ reading development.

The results of the present study offer some preliminary insight into challenging the oft-stated suggestion that phonics instruction alone is sufficient for students to achieve mastery of foundational reading. The study also questions the notion that fluency instruction should be delayed until after students have achieved full proficiency in word recognition accuracy (Stage 1). The results of our study suggest that intentional, multi-component fluency instruction along with phonics and word work may provide an additional boost to students’ reading achievement greater than phonics alone. Moreover, our results suggest that phonics and fluency instruction can, and perhaps should, occur simultaneously as early as grade one.

Fluency’s place in the history of American reading instruction could be viewed as one of benign neglect. Although oral reading recitation was a major component of reading instruction more than a century ago, it was ignored in the later half of the 20th century to the point that by 1983 Allington [2] referred to fluency as the neglected reading goal. Even though fluency did gain some resurgence with its identification as a critical component of effective reading instruction based on the National Reading Panel’s [18] evidence-based assessment of the scientific research literature, fluency has continued to be viewed more as a tangential component of the overall literacy curriculum. An analysis of Reading First [25], a U.S. reading initiative in the first decade of the 21st century, whose goal was for all third

![Figure 1. Raw score post-test gains by group.](image-url)
grade students to be reading at grade level, found that less than five minutes per day was devoted to fluency instruction, even in schools where there was a commitment to provide instruction in the essential instructional components of reading, including fluency, identified by the National Reading Panel. Reading First failed to achieve the goal of all children reading at grade level, and we are left to wonder if a portion of those disappointing results were due to the fact that fluency was not sufficiently emphasized in instruction.

The results of the present study provide a tentative suggestion that intentional and multi-component fluency instruction, along with phonics, may be an appropriate part of a foundational first-grade reading curriculum. Indeed, recognizing the stagnant growth in reading achievement in the United States, and given the present tentative results in favor of the students receiving fluency instruction, integrating fluency into the first-grade reading curriculum has the possibility of making a significant and substantial impact on improving students’ literacy outcomes. The implementation of the FDL required no more than 20 min per day, a time period that could easily be integrated into existing first-grade reading foundational skills instruction.

At a minimum, this study suggests that larger-scale and more in-depth and controlled research into the role of fluency instruction, and in particular the Fluency Development Lesson, on improving reading outcomes in first grade students may be worthwhile. If we are interested in raising reading achievement in the elementary grades, fluency cannot be neglected.

8. Limitations

We acknowledge that this preliminary study is small in scale and the results and recommendations are to be understood and taken with caution. We also recognize that in the present study, given the pre-test–post-test design and authentic nature of classroom and school environments in which the study took place, full control of the instruction and variables was not possible. Still, the nature of the results suggests that further study of intentional and multi-factor fluency instruction, such as the FDL, is worthy of continued study. The reading performance of fourth graders continues to stagnate, and fluency instruction persists in being either a neglected or tangential part of many foundational reading curricula. What is needed is a greater scholarly and research focus on reading fluency instruction where it is embedded in foundational reading skills instruction in the early grades. Clearly, the results of this limited and preliminary study point to the need for larger-scale, more in-depth, and controlled studies of reading fluency instruction and interventions.

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