Improving boys' reading comprehension with readers theatre

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Research on readers theatre has indicated that it can improve elementary students' reading achievement and can be motivating, engaging and enjoyable, even for reluctant or struggling readers. Because of the potential for improvement and the engagement factor, the purpose of this study was to examine the effects of readers theatre on young male students, a population that tends to be more reluctant to read. This matched quasi-experimental study examined the differential effects of readers theatre on second-grade boys' decoding, word knowledge and reading comprehension. Students were pretested and posttested using the Gates-MacGinitie Reading Test. With the use ofa propensity score matching procedure, 46 students were matched from a sample of 76 on the basis of pretest scores, English-language learner status, at-risk status and whether the students received special education services. A repeated measures analysis of variance detected a time effect on the reading comprehension measure, which was qualified by an interaction effect, indicating that boys in the treatment group outperformed those in the business-as-usual comparison group. Implementing readers theatre in elementary classrooms may be an effective means for engaging young male students in the reading process and improving their reading comprehension. Additional implications for instruction, limitations and directions for future research are also discussed.

Keywords: readers theatre, instructional strategies, male readers, reading comprehension, early literacy

Highlights

What is already known about this topic

- Readers theatre is an effective instructional strategy for increasing students' reading fluency.
- Readers theatre is a motivating activity that students typically enjoy.
- Readers theatre has been found to increase students' overall reading ability.

What this paper adds

- This study describes a new readers theatre format that targets reading comprehension and vocabulary.
- This is the first study on readers theatre to investigate differential effects of readers theatre on male readers.
- The quasi-experimental design uses propensity score matching to better balance the treatment and comparison conditions.

Implications for theory, policy or practice

- Historically, male readers have underperformed in literacy than have female readers, and the results indicate that implementing readers theatre could be a viable means to engage male readers.

Readers theatre is typically described as akin to a play in the classroom that does not require memorisation, costumes or props. Essentially, students choose their scripts (often based on children's literature), rehearse in groups for a few days and then perform by reading aloud their scripts for an audience. Although implementations vary, typically, teachers follow a weekly format that introduces the scripts and allows ample time for rehearsal before the performance. In recent years, readers theatre has been recommended as an enjoyable way for students to develop reading fluency (Clark, Morrison, & Wilcox, 2009). Some variations in format have been proposed to achieve additional goals. For example, Young and Rasinski (2009) followed a 5-day format where students began the week by choosing their scripts. On the second day, students would select their parts and focus on word recognition. On day three, the students rehearsed again, but focused on their oral reading expression, coaching one another if necessary. The fourth day required students to practice their performances. Finally, on the fifth and final day, students performed for an audience, which was usually composed of other classes and/or students' families. In a more recent format, Young, Stokes, and Rasinski (2017) not only described a similar 5-day format but also include daily activities that target reading comprehension and vocabulary in order to engage students in other important components of the reading process in addition to fluency.

   Research on readers theatre has indicated that it can improve elementary students' reading achievement (Griffith & Rasinski, 2004; Keehn, Harmon, & Shoho, 2008) and can be motivating, engaging and enjoyable, even for reluctant or struggling readers (Clark et al., 2009; Corcoran & Davis, 2005; Worthy & Prater, 2002). However, no research

has specifically investigated boys' response to readers theatre. Because of the potential for improvement and the engagement factor (Weaver-Hightower, 2003), the purpose of this study was to examine the effects of readers theatre on boys, a population that is typically more resistant to reading (Marinak & Gambrell, 2010; Perrin, 2016) and also more likely to struggle as readers (Brozo, Shiel, & Topping, 2007; Hall & Coles, 1997; Meece, Glienke, & Burg, 2006).

Gender differences in schooling

Although gender identity begins at home and before formal schooling (Maccoby, 1998; Thorne, 1993), school is an environmental factor in both gender identity and the documented gender differences in school achievement (Millard, 1997; Topping, 2015; Topping, Samuels, & Paul, 2007). Indeed, it appears that school factors, including instructional practices and peer-group interactions, contribute to dispositions about learning in general, and reading in particular, with negative consequences for boys (Francis, 2000; Poskiparta, Niemi, Lepola, Ahtola, & Laine, 2003). While boys continue to be verbally dominant in schools (Sadker, Sadker, & Zittleman, 2009), they tend to be noisier, more active and easily distracted (Francis, 2000; King & Gurian, 2006). Boys are also more likely to display detached attitudes about school (Cohen, 1998; Gray & McLellan, 2006). More boys than girls are reported for behavioural problems, qualified for special education and drop out of school (Legewie & DiPrete, 2012). Boys in industrial nations are currently performing lower than girls in core subjects, including language arts, mathematics and science (Kirsch et al., 2002). Additionally, lower socio-economic status male students exhibit more negative dispositions about school (Grant & Rong, 1999); thus, the school context differentially affects children with more pronounced effects in poorer and lower-achieving schools and especially for boys.

Concerns about gender differences have resulted in what some describe as a demasculinisation of school and a negative view of boys who do not fit in (Gray & McLellan, 2006; Legewie & DiPrete, 2012; Martino, 2001). Essentially, schools may be contributing unintentionally to gender inequity by valuing compliance and grade pursuance, which is more characteristic of girls (Maccoby, 1998; Schwanenflugel & Knapp, 2018). Boys more often resist school by doing less work and looking cool (Topping, 2015; Welldon, 2005), perhaps to avoid the feminine stigmatisation of identifying with schoolwork, particularly language arts, as women's work (Hall & Coles, 1997; Jacobs & Eccles, 2002; Skelton, 2002).

As noted earlier, self-perceptions of learners and early reading experiences seem to differ by gender and begin in the early grades (Millard, 1997; Poskiparta et al., 2003). Girls in many public schools in industrialised nations are outperforming boys, most notably in reading (Hall & Coles, 1997; Kirsch et al., 2002; Meece et al., 2006). This disparity may be a result of how notions of reading and readers are constructed. The gender literacy gap includes both literacy achievement and dispositions about literacy, which Hall and Coles attribute to 'narrow experiences with fiction' (p. 61) that has been typical in many classrooms. Another finding is that weaker readers (who are more often male) tend to stay with familiar books, which can stagnate their reading interests and the language that they encounter therein (Millard, 1997; Topping, 2015; Topping et al., 2007). Weaker students generally need more practice and instruction, but typically read less

than their peers, in part, because they struggle to finish required schoolwork and do not get to the free reading that is offered during less structured times during the instructional day (Allington, 1983). Such scheduling realities send the message that reading is something that one does when everything else is completed, rather than a prioritised opportunity to explore shared experiences with diverse reading materials. Communicating narrow views of reading with regard to time, text type and kind of reading (e.g., silent) may be contributing a 'dichotomous gender identity' (Millard, 1997, p. 33) that is leaving boys, particularly those who struggle as readers, behind (Schwanenflugel & Knapp, 2018).

Gender preferences and literacy

Concerns over 'the gender relationship between reading engagement and achievement' (Brozo et al., 2007, p. 308) have continued and gained greater urgency in recent years (Perrin, 2016; Topping et al., 2007). A quick search online affords numerous websites, podcasts and online news items appealing to parents, teachers and librarians to understand the trend of less reading among more boys. For more than two decades, researchers (Hall & Coles, 1997; Marinak & Gambrell, 2010) have argued for more understanding of reading dispositions and building on boys' reading choices. A larger proportion of boys than girls perceive learning to read as difficult (Millard, 1997; Topping, 2015) and that they rarely read for extended periods of time. Indeed, boys more often report that their out-of-school reading is minimal, perhaps because boys are more likely to associate reading with school rather than as a personal hobby. Hall and Coles' research notes that, although reading activity had not declined for elementary-age boys in their sample, by age 14, boys were reading less. Interestingly, while the number of books read declined with age, there was an increase in the number of periodicals. The boys in the sample (located in England) chose to read more comic and joke books, as well as humorous fiction. Hall and Coles summarise that 'reading patterns and practices are highly gendered but narrative is still dominant' (p. 65). They recommend that teachers 'broaden definitions of what counts as being a good reader by careful analysis of what readers can, rather than what they cannot do' (p. 65).

Opportunities for reading in school

To communicate better the kind of readers that children can become, teachers might consider the reading preferences and in-school reading opportunities to assist children in moving forward as willing readers (Taylor, 2004). Real-world reading is guided by goals and purpose, while school reading is often perceived by students as something that they do for their teacher rather than for themselves or with their peers. Reading with a goal, such as readers theatre, within a strong peer culture could support both male and female readers. Related research (Wang, Sabatini, O'Reilly, & Feng, 2017) recommends giving students real reasons to spend time reading and attending to textual content. Explaining the purpose and reviewing specific instructions have been shown to change readers' goal-focusing processes. In other words, students process text differently and remember targeted elements depending on the goal or task that is assigned for the reading (Wang et al., 2017). Therefore, instructing students to focus on their expressiveness (also known as prosody) when practicing entertaining readers theatre

scripts might help them learn unfamiliar words and interesting phrases more efficiently. Such activities also communicate that some types of reading serve the purpose to entertain and share with others.

Prosody 'indicates the extent to which the rhythm, tone, and emphasis of the oral reading matches the content and meaning of the text' (Sabatini, Wang, & OReilly, 2018, p. 4). In other words, prosody is a multifaceted construct and entails several components that can challenge early readers. Interestingly, research has found that measures of rate, accuracy and prosody differentially contributed to reading comprehension with greater influence for less proficient readers (Sabatini et al., 2018). This finding – that prosody relates to comprehension almost as strongly as rate – highlights the value of oral reading with expression and its development as part of reading instruction. Prosodic reading features smoother phrasing and a 'more appropriate syntax-preserving' (Sabatini et al., 2018) presentation of the text. For young readers, reading smoother and concentrating on what words mean together typically require some amount of practice.

Readers theatre encourages practice and promotes mastery in order to render a competent reading of a text to entertain others. Thus, readers theatre could provide a different perspective on reading, especially for weaker readers, making reading less passive and less about racing to finish the text. Indeed, restructuring the classroom environment to make reading less 'one-and-done' and more transactional and public could promote a peer culture that values reading as shared exploration. Students practice scripts to become more efficient and prosodic readers and are able to demonstrate that reading achievement by sharing it with others (Kush & Watkins, 1996). Readers theatre is typically not grade oriented and promotes appreciation of others' reading skills. The goals are about getting better, taking risks, making mistakes but learning to communicate text with clarity and expression.

Despite its focus, readers theatre concomitantly provides two forms of formative assessment. Primarily, student readers hear and can assess themselves as part of the daily practice of script reading. Considering ways to improve their reading and working to do so fosters students' self-regulation, which involves students in the evaluation process. The teacher is also active in monitoring the reading and can use the students' performances as additional input on their reading fluency development. Thus, readers theatre potentially offers numerous benefits for early readers and may especially appeal to boys in an environment that includes more purposeful reading in less-school-like settings.

Research on readers theatre

In addition to research claiming readers theatre can be a motivating and engaging activity (Martinez, Roser, & Strecker, 1998; Rinehart, 1999), Worthy and Prater (2002) claimed that readers theatre is 'one instructional activity that not only combines several effective research-based practices, but also leads to increased engagement with literacy even in very resistant readers' (p. 294). Readers theatre is often reported as an enjoyable instructional approach that includes differentiated groupings and can be motivating for struggling readers (Clark et al., 2009; Liu, 2000). Chou (2013) described readers theatre as an interactive, cooperative and enjoyable instructional activity, and thus, it may appeal to all students, including boys.

In addition to the motivational aspects, readers theatre has also been found to improve overall reading achievement. Martinez et al. (1998) implemented readers theatre with second graders at an inner-city school. Of the 52 students, 76% were not meeting grade-level expectations. However, after participating in readers theatre for 10 weeks, 75% of the students met or exceeded the grade-level expectations. Similarly, Vasinda and McLeod (2011) used readers theatre for 10 weeks with 35 struggling second and third graders, and their mean reading level increased a remarkable 1.13 years in less than 3 months. However, this implementation differed because the final performances were podcasted on the Internet, which provides evidence that technology can be integrated into readers theatre. Millin and Rinehart (2010) concluded that readers theatre activities benefited all students, but especially those who began with lower oral reading skills.

In a 9-month study, Griffith and Rasinski (2004) implemented readers theatre with 15 at-risk fourth graders, and their silent reading comprehension mean score grew by 2.87 years. Furthermore, Garrett and O'Connor (2010) studied 46 K-5 students who received special education services for 9 months. The students' reading level mean increased by 0.8 years, comprehension grew by 0.95 years, and reading fluency increased by 0.9 years. Fluency gains as a result of readers theatre are frequently reported (Bidwell, 1991; Keehn, 2003; Keehn et al., 2008; Millin & Rinehart, 1999).

It is important to note again that fluent reading is closely related to reading comprehension (Reutzel & Hollingsworth, 1993). Decades ago, Goodman (1964) found that students who read expressively were more likely to be better comprehenders. Later, Miller and Schwanenflugel (2008) discovered first-grade students who read with adult-like expression tended to have better comprehension by the end of third grade. Previous research on readers theatre has established that it is an effective instructional tool for increasing reading fluency (Corcoran & Davis, 2005; Young & Rasinski, 2018), but the activity is not well established as supporting other areas of reading. Thus, this study looked beyond reading fluency measures to investigate potential effects on other components of reading, including the main goal of reading – comprehension.

Significance of the study

With the many demands on teachers' time and shifting curricular priorities, implementing readers theatre is a user-friendly way to diversify the reading instructional block and develop several aspects of reader identity. Readers theatre promotes linguistic awareness, which is known to correlate with reading and writing achievement. In response to a call for more integrative reading approaches from a recently published analysis of oral reading performance (Sabatini et al., 2018), this study sought to isolate the effect of readers theatre on second-grade boys who were developing their oral reading fluency. The goal was to determine whether readers theatre could help close the reading achievement gap while engaging young boys and promoting their membership as classroom readers. With the use of a subset of data from a larger study (Young, Durham, Miller, Rasinski, & Lane, 2019), this report provides a more nuanced appreciation for the potential benefits of readers theatre among young male readers. Additionally, it encourages teachers to consider how to design literacy in ways that support reluctant and resistant readers, which are more often male (Marinak & Gambrell, 2010). The research was guided by the following question: What are the effects of a readers theatre treatment on second-grade boys' reading comprehension, word knowledge and decoding skills?

Method

Participants

The second-grade subjects (ages 7–8) were purposively selected for analysis from a larger study on the effects of readers theatre (Young et al., 2019). The students were selected based on their gender from seven classrooms in three school districts in the South Central United States. There was a total of 76 male students, and after utilising propensity score matching to balance the treatment and comparison groups, the final analysis included 46, with 23 male readers in each group. An a priori power analysis showed sufficient power (.93) to detect a moderate effect.

After the matching process (described in detail later in this section), the descriptive statistics showed that 12% in both the treatment and comparison groups were English-language learners. Sixty percent in the treatment group were considered at risk for reading failure as compared with 38% in the comparison group. Finally, 5% received special education services in the treatment, and 14% received these services in the comparison group.

The teachers were recruited from across the state. The primary researcher prepared, advertised and conducted free readers theatre professional development throughout the state. The 3-h training presented and guided teachers through the steps of the readers theatre format. Teachers engaged in the process from beginning to end. In addition, the sessions were filmed so that teachers could watch the training again as many times as necessary. The primary researcher also provided printed copies of the readers theatre framework. At the end of the sessions, teachers were invited to participate in the study. Initially, there were approximately 20 teachers willing to participate, but many dropped out prior to start of the study (August) owing to the catastrophic effects of a natural disaster in the region. One of the teachers dropped out in the middle of the study because the teacher did not consistently implement readers theatre in the specified format. In the end, seven teachers agreed to participate and successfully completed the tasks set by the researchers.

Four different teachers taught students in the comparison group. Their experience ranged from 3 to 17 years with a mean of 7.33 ($SD = 5.15$). In the treatment, there were three teachers, and their experience ranged from 4 to 18 years, and the mean was 11.82 ($SD = 6.00$). For fidelity, the primary researcher observed the treatment classrooms twice to ensure the readers theatre format was being implemented as designed. At time 1, 100% of the classrooms met fidelity, and at time 2, 88% of classrooms were implementing readers theatre in the specified format. In addition, the language arts district coordinator observed a full week of implementation, filmed the process and shared the recordings with the primary researcher. Subsequently, the coordinator frequently but informally checked in with the teachers who were participating in the study. However, comparison classrooms were not observed, but the teachers were surveyed and asked to describe their fidelity in regard to their adopted reading programme as well as any other consistent instructional practices.

Context

Sixty-four percent of the students at the treatment school were White, 23% were Hispanic, 10% Black and 3% two or more races. In the comparison group, the school's demographics were 54% White, 27% Hispanic, 12% Black and 5% two or more races. Demographically,

the schools were relatively similar. The treatment group classes were drawn from a school reporting that 77% of the students received a free or reduced lunch, and the comparison school reported 43%.

The readers theatre as an instructional treatment

For each of the 18 weeks of the readers theatre treatment, a 5-day protocol was followed that incorporated activities focused on building fluency, comprehension and vocabulary. The teacher used the gradual release model so that as the week progressed, responsibility for reading was increasingly turned over to the students in preparation for a culminating activity that showcased their independent reading skills. Students engaged spent 20–30 min in the process daily.

Every Monday, the teacher began by reading aloud each of the scripts selected for the week. In addition to modelling fluent reading, the teacher demonstrated how skilled readers formulate questions as they read, which helps them to better comprehend the text. The students followed along as the teacher read and then, as a group, generated questions about each script. For example, the teacher might ask students to infer characters' motivations or examine possible reasons for events in the story. Students also discussed the quality of the teacher's reading.

In order to prepare students to work in smaller groups, the teachers chose scripts with a sufficient number of parts for the whole class during the first few weeks and guided them through the process. It is often recommended that the teachers gradually release the entire framework using a whole group approach first, and when ready, typically after 2 or 3 weeks, the teachers can choose multiple scripts suitable for smaller groups. At that time, the teacher actively monitors and assists when necessary.

The scripts were selected from www.thebestclass.org, which has over 200 scripts ranging in difficulty and genre. However, none of the scripts are actually 'levelled', and teachers selected scripts on the basis of their student's interest and/or quality of the text. Thus, students were not restricted by reading level and were introduced to a wide variety of challenging texts with complex and/or new vocabulary words. Most of the scripts were based on popular children's literature or poetry.

After listening to all of the scripts, students selected one to focus on for the week. Choice was incorporated in order to increase student engagement in the weeklong activity (Schraw, Flowerday, & Reisetter, 1998). Students were then grouped according to their choices with group size being determined by the number of parts in each script. Each week as new scripts were selected, the groups changed, thus allowing students to work with different people across the intervention. Once placed in their respective groups, students were given a copy of the script and asked to read it again focusing on meaning and underlining any unfamiliar words they encountered.

On Tuesdays, students met with their group and began with another reading of the script, this time a choral reading. The safety provided by reading the text chorally allowed students to learn to read the text without fear of making mistakes and to appreciate it holistically rather than worrying about their own parts. After the choral reading, students worked together to summarise the text with feedback from the teacher. Students concluded the activity with a discussion of the unknown words they had circled on Monday. As they worked together to define the words, students noted the definitions on their script for future reference.

Wednesdays included script rehearsal with coaching support from the teacher. Each group worked together to assign parts then spent time rehearsing. Meanwhile, the teacher circulated among the groups, providing encouragement and feedback and clearing up any misconceptions about the meaning of the text and key vocabulary. Students were also asked to locate interesting words in the script and draw a box around them.

Although readers theatre requires no costumes or props, Thursdays were reserved for 'dress rehearsals' because it was the last opportunity to rehearse before Friday's performance. Groups selected an area of the room to stand together and fine-tune their reading, this time aiming to read with accuracy, expression and at an appropriate pace. After this final reading, students were asked to pair up with students from other groups and retell their scripts.

On Fridays, the teacher provided an opportunity for a grand performance in which students were able to perform their scripts for a real audience, which might include classmates, parents or other guests. Students began by teaching the audience the vocabulary words they learned that week. They performed and then concluded by sharing what they liked about their respective script and what they would change about it. The grand performance – as a shared goal – was included to lend authenticity to the week's activities and to create purpose, excitement and interest in reading (King & Gurian, 2006).

Reading instruction in the comparison group

The comparison group included students from two districts. Sixty minutes of instructional time was dedicated to reading instruction in both districts, with 30 min spent using the districts' basal or reading programme and 30 min of independent work and guided reading. The daily guided reading groups allowed teachers to meet with small groups of students to provide individualised instruction at their reading level.

In one district, there was no required reading curriculum, so teachers chose to use *Rooted in Reading* (Lemons, 2019) to guide instruction. This programme includes a combination of read-aloud lessons aligned to state standards, related nonfiction readers and reading passages to be used for test preparation. The intent of this programme is to provide multiple opportunities to study for the weekly text as well as to create interest in reading.

The other district required teachers to use their adopted basal reading programme. In this programme, skills are taught based on big ideas found in authentic literature. The programme's scope and sequence include activities that teach concepts about print, phonological and phonemic awareness, decoding and word recognition, reading fluency, vocabulary and concept development, and reading comprehension. A daily writing component is also incorporated into the programme. Supplemental materials are included for use with English learners and other students who need differentiated instruction.

Similarities and differences between groups

In both groups, students engaged in a 90-min reading block, which was driven largely by the districts' adopted programmes. In the comparison group, the teachers taught from the adopted reading programme, and 30 min was devoted to independent work, and teachers met with guided reading groups during that time. Thus, students generally received instruction on the basis of the district adopted reading basal reading programme, which generally focused on teaching concepts about print, phonological and phonemic awareness,

decoding and word recognition, vocabulary and concept development, and reading comprehension. These concepts were taught explicitly and also integrated into authentic literacy.

Similar to the comparison group, the treatment group's daily reading block was 90 min long, and 60 min of the instruction was dedicated to the adopted reading programme, which also included time for small groups and independent work. The difference, however, is that teachers in the treatment group reported spending up to 30 min per day on readers theatre. Of course, there were likely other differences, which changed day by day, and these differences could not always be controlled or documented. This is often a limitation when conducting research in schools. Generally, then, both the treatment and comparison groups engaged in balanced literacy instruction from adopted reading programmes, but readers theatre stood out as a substantial difference between groups.

Propensity score matching

Students were selected at the student level from a larger study and were included based on their gender. There were 76 male students in the study, but the final analysis only included 46, as the groups were statistically matched prior to the analysis. Propensity score matching was used with this subgroup to minimise potential bias between the groups because students were not randomly assigned to the theatre intervention. The propensity scores were estimated using logistic regression and included the following covariates: (1) Gates-MacGinitie Reading Test–Fourth Edition (GMRT-4) pretest scores, (2) English-language learner status, (3) at risk for reading failure and (4) special education status. To clarify, students are generally considered at risk when assessed to be at least 6 months below grade level.

Students were matched one to one without replacement using a distance calliper of 0.15 standard deviations of the logit transformation of the propensity score. The standardised mean difference between the groups on propensity scores and covariates should not exceed 0.2 (Caliendo & Kopeinig, 2008; Rubin, 2001). As shown in Table 1, the unmatched design had several measures with effect sizes that were much too large. However, after matching, all of the variables' mean difference effect sizes were 0.2 or below, indicating that the groups were better balanced. Finally, the logistic regression model was not statistically significant, $\chi^2(4) = 8.42$, $p = .08$, indicating the that there was no significant difference between the observed and expected values, and the model explained 22% (Nagelkerke R^2) of the variance.

Table 1. Summary of balance for unmatched and matched groups

	Unmatched (*n* = 76)				Matched (*n* = 46)			
	Treated *M*	Comparison *M*	*SD*	*d*	Treated *M*	Comparison *M*	*SD*	*d*
ELL	0.12	0.12	0.33	0.00	0.13	0.09	0.29	0.13
At risk	0.60	0.38	0.49	**0.43**	0.52	0.52	0.51	0.00
SPED	0.05	0.15	0.35	**−0.46**	0.09	0.13	0.34	**−0.20**
Pretest	49.43	66.44	26.24	**−0.71**	56.09	55.83	19.85	0.01

ELL, English-language learner; SPED, special education.

Instrumentation and analysis

Students were pretested and posttested using two forms of the GMRT-4 (MacGinitie, MacGinitie, Maria, & Dreyer, 2002), which is a standardised test that assesses students' decoding skills, word knowledge and reading comprehension. The correlations between the two forms are strong on all three measures: word decoding ($r = .86$), word knowledge ($r = .86$) and reading comprehension ($r = .82$). The overall scores between the forms are also strongly correlated ($r = .90$). The internal consistency of each form is highly reliable according to the Kuder–Richardson Formula 20 for all three measures, including word decoding (.95), word knowledge (.93) and reading comprehension (.92). The overall reliability is also considered high (.97; MacGinitie et al., 2002). The GMRT-4 pretest and posttest data were then analysed using a repeated measures analysis of variance (ANOVA).

Results

To examine the differences between male readers in the readers theatre treatment group and the business-as-usual comparison group, the researchers examined differences between the groups from pretest to posttest on three outcome measures, including decoding, word knowledge and reading comprehension.

Prior to the analysis, assumptions were tested for each of the outcome variables. Lavene's F was insignificant for all measures, indicating an equality of error variances. The result of Box's M test was insignificant ($p = .07$); therefore, the equality of covariance matrices assumption was met. According to the Shapiro–Wilk test for normality, the word knowledge measure failed the normality test ($p = .02$), and thus, the variable was not analysed parametrically. Therefore, the researchers used the Mann–Whitney U to determine differences at posttest for the word knowledge outcome measure; the results indicated that there were no statistically significant differences on the word knowledge posttest between the treatment and comparison groups, $U = 251.50$, $p = .78$, $r = .04$.

The remaining variables, decoding and reading comprehension, were normally distributed. The means and standard deviations for the treatment and comparison groups on the two outcome variables used in the parametric analysis as well as the word knowledge measure are presented in Table 2. As the table indicates, pretest means for both measures were similar in treatment and comparison.

Table 2. Descriptive statistics of raw scores in treatment and comparison groups

Measure	Treatment ($n = 23$)		Comparison ($n = 23$)		d
	M	SD	M	SD	
Pretest decoding	20.74	9.62	19.83	7.52	1.35
Posttest decoding	30.91	8.19	26.83	8.48	
Pretest word knowledge	17.57	8.92	17.30	6.75	0.82
Posttest word knowledge	24.39	12.43	22.26	7.94	
Pretest comprehension	17.78	8.27	18.61	7.02	0.89
Posttest comprehension	28.09	7.35	22.61	6.45	

A 2 (treatment) × 2 (time) repeated measures ANOVA revealed statistically significant time effects on students' decoding skills, $F(1,44) = 88.24$, $p < .001$, $\eta_p^2 = .67$, and no significant group effect, $F(1,44) = 1.15$, $p = .29$, $\eta_p^2 = .03$. These main effects were not qualified by an interaction effect, $F(1,44) = 3.01$, $p = .09$. Although the growth was not statistically significant, according to the descriptive statistics, both groups made gains, but students in the treatment group made slightly greater gains on the word decoding subtest from pretest to posttest.

Another 2 (treatment) × 2 (time) repeated measures ANOVA revealed statistically significant main effects on students' reading comprehension, $F(1,44) = 41.97$, $p < .001$, and the effect was large ($\eta_p^2 = .49$); there was no significant group effect, $F(1,44) = 1.59$, $p = .21$, $\eta_p^2 = .04$. The time effect was qualified by an interaction effect, $F(1,44) = 8.15$, $p < .01$, and the effect was large ($\eta_p^2 = .16$). Students in the treatment group made significantly greater gains on the reading comprehension subtest from pretest to posttest.

Discussion

In educational research, it is desirable to see improvement in all groups regardless of the instructional approach. Fortunately, in this case, both groups made gains on all three measures. However, the results of the study indicated that boys who participated in readers theatre showed greater gains in reading comprehension. The treatment and comparison groups performed similarly on word knowledge and decoding outcome measures, as differences were not statistically significant.

The time effect detected on the decoding measure was statistically significant, but no interaction effects were detected, indicating that the groups did not differ significantly. A discussion of this comparable growth is warranted. Decoding and phonics instruction in-context have been found to be an effective approach in previous research (Dahl & Scharer, 2000). In the business-as-usual groups, the adopted programmes had decoding components embedded in the scope and sequence and daily activities, and gains were also expected, as there is evidence that teaching decoding skills in isolation can also benefit students (Ryder, Tunmer, & Greaney, 2008). According to these results, however, the boys in the treatment group appear to have benefited similarly from the contextualised encounters with words in readers theatre. It is possible that reading with and for others motivated 'word accountability' and decoding of words among the boys in the treatment group and that the repeated rehearsal of the scripts fostered a mastery of the words with collateral benefits for fluency and comprehension.

Next, it is worth reiterating that the word knowledge variable was not analysed parametrically because there were a few outliers that skewed data. Without suitable nonparametric tests that simulate the 2 × 2 repeated measures ANOVA, only the posttest differences could be examined. The Mann–Whitney U test found no meaningful differences between groups for the word knowledge measure, indicating that the groups performed similarly on the posttest. This similarity also warrants a discussion. Similar to the decoding outcome measure, students were exposed to a variety of new and challenging words in both groups, and having responsibility for attending to and explaining vocabulary as part of the readers theatre protocol could have contributed to word knowledge gains. Students were required not only to accurately read the words aloud but also to understand the meanings. Understanding the vocabulary in the scripts was likely critical in understanding the overall meaning of the texts. Fortunately, students were given ample opportunity to discuss the definitions of

previously unknown and/or complex vocabulary in groups on a weekly basis. Santoro, Chard, Howard, and Baker (2008) argued that giving the opportunity to discuss words with peers can help students become more attentive to words and interested in vocabulary, which can accelerate vocabulary acquisition and word knowledge. Indeed, word consciousness is a term applied to developing metalinguistic awareness, which fosters a word-learning attitude. In this case, the protocol embedded an expectation of some level of word mastery, which, while speculative, may have appealed to the goal-oriented learning (Dweck, 1986) that has been attributed more to boys.

Finally, the analysis detected within and between group effects on boys' reading comprehension, indicating that readers theatre influenced the comprehension of the students in the study. This finding aligns with previous research that suggested readers theatre has the potential to increase comprehension (Garrett & O'Connor, 2010; Keehn et al., 2008). However, this is one of the first studies to find interaction effects on a standardised reading comprehension measure. The significant interaction effect for reading comprehension, $F(1,44) = 8.15$, $p < .01$, was complemented with a large effect size ($\eta_\mathrm{p}^2 = .16$). This important finding suggests that the systematic implementation of this readers theatre format can have a significant impact on second-grade boy's reading development, especially in reading comprehension, which is not often targeted in early-grades instruction. It is likely that the revised readers theatre format that included specific explicit and implicit reading comprehension activities, as well as a focus on word study, helped students to focus on meaning in addition to fluent renderings of text (Young et al., 2017). Augmenting readers theatre to include a shared choral reading at the outset likely supported a strong initial gist of each script that promoted the value of understanding the text as a whole, before assigning specific roles and lines to students. The subsequent attention to key words (negotiated in the group discussions) may have also ameliorated students' understanding and improved their prosodic interpretations, fostering interest in and comprehension of the text (Oakhill & Petrides, 2007). Expecting the readers theatre groups to attend to more than memorising the scripts communicates that reading can be a shared endeavour and that conveying meaning is the goal, rather than answering questions or preparing for a test. Allowing for some choice and control (Brozo, 2002) of the scripts and the related tasks may also message to students that they are readers who have something to share, which contributes to reader identity that some boys lack. Interestingly, orally interpreting scripts may even help students vicariously express emotions that they would not otherwise share (Taylor, 2004). As Coles and Hall (2001) described:

> Sustained literacy habits are based on the confidence and independence, which come from seeing yourself as a reader and writer, someone who has the power to use literacy as a tool, as a means of self-expression and as a means of enjoyment. (p. 220)

Limitations and future research

There are always limitations when conducting quasi-experimental research, especially in regard to lack of randomisation and control for potential confounding variables. However, steps were taken to better balance treatment and comparison groups using a statistical matching procedure. Unfortunately, propensity score matching has its own limitations, in that the researchers are tasked to determine which covariates might be important. However, the covariates selected in this study are commonly considered in quasi-experimental

research (Reutzel, Petscher, & Spichtig, 2012). Because of the matched design, the results are arguably more reliable than some quasi-experimental approaches.

It is also important to note that the matching procedure does not necessarily promise equal percentages of student categories. For example, students differed between groups by 22% in the at-risk category. However, when juxtaposing the achievement of students in both groups after the matching procedure, the at-risk status had zero effect on group assignment ($d = .00$). Thus, students were more alike, and there were more important factors than being labelled 'at-risk'.

Another limitation is the fact that the sample size was reduced because of the matching process. An a priori power analysis recommended a sample size of 54. This was achieved prior to the matching, but a post hoc analysis of the final sample size of 46 still indicated the study retained high power to detect a moderate effect (.93). In the end, effects were detected, and the results were considered reliable in this context, but also worthy of further exploration. Future research should increase the sample size and examine the effects in the context of a true experiment. Finally, as readers theatre is typically regarded as a reading fluency activity, fluency measures should be also used; this is both a limitation of this study and a recommendation for future research.

Conclusion

The results of this study corroborate research (Millin & Rinehart, 1999) that using readers theatre with second-grade boys can positively influence important reading skills and processes more so than traditional curricula. The readers theatre format described in this study targeted important elements of reading that likely contributed to the greater growth. Although untested, the social nature and physical activity, such as acting, may have also had an impact on boys, without disserving girls. This postulation is theoretical, but exploring relevant variables, such as physicality, shared purpose and word consciousness, certainly seems worthy of future research.

While this particular implementation was successful in the contexts and grade level studied, it is important for teachers to consider their own classroom contexts and teaching styles and adjust the implementation as necessary to meet the needs of their specific students. Teachers should bear in mind that the focus on reading comprehension and word study was likely crucial to making readers theatre more comprehensive. Overall, the study offers readers theatre as a viable option for use in the classroom, promoting literacy development, textual and social engagement, and personal expression (Taylor, 2004), all of which can be more challenging goals for boys who may be reluctant readers.

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