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VIRTUAL READ-ALOUD VERSUS SILENT READING: EFFECTS ON MIDDLE SCHOOL READING COMPREHENSION

LECTURA EN VOZ ALTA VIRTUAL VERSUS LECTURA SILENCIOSA: EFECTOS EN LA COMPRENSIÓN LECTORA EN EDUCACIÓN MEDIA

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ABSTRACT

This exploratory study examined the impact of two reading conditions on the comprehension of sixth-grade students. The objective was to determine whether participation in a virtual read-aloud intervention was associated with differences in reading comprehension compared with silent reading. Participants were assigned to either of the two conditions. Reading comprehension was measured through a pretest and a posttest assessment. The pretest established baseline comprehension, while the posttest assessed independent reading of new excerpts. Data were analyzed using an independent-samples *t*-test to explore comprehension gains and analysis of covariance (ANCOVA) to compare posttest performance while controlling for baseline pretest scores. Results indicated no statistically significant differences between the reading conditions, neither in the change of mean between groups nor after controlling for baseline differences. However, a large practical effect size was observed between the groups in the *t*-test, favoring the read-aloud condition. This suggests that the intervention may have educational relevance despite the lack of statistical significance. The exploratory nature of the study and the small sample size suggest that further research is needed to examine the potential impact of these reading modalities in larger and more diverse samples. The findings contribute to the literature on read-alouds and middle school literacy and offer implications for future research.

RESUMEN

Este estudio exploratorio examinó el impacto de dos condiciones de lectura en la comprensión de estudiantes de sexto grado. El objetivo fue determinar si la participación virtual en una intervención de

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lectura en voz alta se asociaba con diferencias en la comprensión lectora en comparación con la lectura silenciosa. Los participantes fueron asignados a una de las dos condiciones. La comprensión lectora entre condiciones se evaluó mediante un pretest y un posttest. El pretest estableció los niveles iniciales, mientras que el posttest evaluó la lectura independiente de nuevos fragmentos del texto. Los datos se analizaron mediante una prueba independiente *t* para examinar las ganancias de comprensión y un análisis de covarianza (ANCOVA) para evaluar las diferencias en el postest controlando las puntuaciones iniciales. Los resultados no mostraron diferencias estadísticamente significativas entre las condiciones de lectura, ni en los cambios de la media entre grupos ni después de controlar las diferencias iniciales. Sin embargo, se observó un tamaño de efecto práctico grande entre los grupos con la prueba *t*, favoreciendo la lectura en voz alta. Esto sugiere que la intervención puede tener importancia educativa a pesar de la falta de significancia estadística. La naturaleza exploratoria del estudio y el reducido tamaño de la muestra sugieren la necesidad de continuar investigando el potencial impacto de estas modalidades de lectura en muestras más amplias y diversas. Los hallazgos contribuyen a la literatura sobre lecturas en voz alta y la alfabetización en la escuela media y ofrecen implicaciones para investigaciones futuras.

Introduction

Reading comprehension is a complex cognitive and linguistic process that enables learners to extract, interpret, and construct meaning from written text (Gough & Tunmer, 1986; Kintsch, 1988). It serves as a foundation for learning across academic disciplines and is closely associated with students' educational success and long-term achievement (Perfetti, 1985; Snow & Biancarosa, 2003). Despite the importance of reading comprehension for academic success across disciplines, U.S. and international assessments continue to report declines in reading performance during the upper elementary and middle school years (National Assessment of Educational Progress, 2022). These findings highlight the need for effective instructional practices that support comprehension development during this critical stage.

One contributing factor to these literacy challenges is the transition from "learning to read" to "reading to learn," a developmental shift in which students are expected to apply higher-order thinking cognitive skills (Chall, 1983; Duke & Pearson, 2002). These skills include integrating textual information with prior knowledge, generating inferences, monitoring understanding, and evaluating ideas critically as students construct meaning from text (Kintsch, 1988; van den Broek et al., 2009). However, students are not adequately prepared for this transition (National Assessment of Educational Progress, 2022). Factors such as limited academic vocabulary, insufficient background knowledge, and inconsistent exposure to comprehension modeling contribute to persistent challenges and widening achievement gaps among learners (Shanahan & Shanahan, 2008; Snow & Biancarosa, 2003), especially as comprehension difficulties may accumulate over time and affect students' ability to engage successfully with increasingly demanding academic texts (Perfetti, 1985). These challenges suggest that effective comprehension instruction must extend beyond exposure to text and provide students with opportunities to engage actively in meaning construction. As a result, literacy researchers have emphasized the importance of instructional approaches that explicitly make comprehension processes visible and provide structured support as students interact with increasingly complex texts (Duke & Pearson, 2002; Fisher & Frey, 2008).

Among instructional practices designed to support comprehension, teacher-led read-alouds have been widely recognized for their role in modeling fluent reading, introducing complex vocabulary, and facilitating interactive meaning-making (Fisher & Frey, 2008). Interactive read-alouds are instructional practices in which teachers typically combine oral reading with structured discussion and opportunities for students to engage actively with text meaning to support comprehension (Fisher & Frey, 2008; Laminack, 2016; Trelease et al., 2019). Research has shown that read-alouds can support oral language development, vocabulary acquisition, listening comprehension, and engagement with increasingly complex texts (Marchessault & Larwin, 2014; Santoro et al., 2008; Trelease, 2013). Read-alouds also provide students with exposure to fluent oral reading, an important component of literacy development given the documented relationship between oral reading fluency and overall reading achievement (Rasinski & Hoffman, 2003). By exposing students to language and ideas that may exceed their independent reading levels, read-alouds could provide opportunities for learners to access complex content while participating in guided discussion and reflection.

Read-alouds may also support the development of reading autonomy. Laminack (2016) and Trelease (2013) stress their role in helping students internalize strategies that promote independent comprehension. From a scaffolding perspective, read-alouds can provide temporary support that helps learners comprehend complex texts and transition from assisted to independent reading. This perspective aligns with gradual release of responsibility models, which emphasize responsive support and the progressive movement from teacher-guided learning toward independent application of literacy strategies (Fisher & Frey, 2008; Vygotsky, 1978). However, despite strong evidence of their effectiveness in elementary settings, read-alouds are less frequently implemented in middle school classrooms, where silent reading is often emphasized (Ivey & Broaddus, 2001). Consequently, questions remain regarding the role and effectiveness of read-aloud instruction for early adolescents as literacy demands continue to increase across content areas.

While read-alouds emphasize teacher guidance and interactive meaning-making, literacy instruction in the upper grades increasingly places greater responsibility on students to construct meaning independently. As students advance through middle school, opportunities for independent reading become more common, reflecting the belief that students benefit from sustained engagement with text and the development of self-regulated comprehension strategies (Krashen, 2004). Consequently, understanding the relative contributions of teacher-supported and independent reading experiences remains an important consideration for literacy instruction.

Although read-alouds are frequently associated with positive literacy outcomes, findings across studies are not universally consistent. Researchers have emphasized that the instructional value of read-alouds depends on how they are implemented, including the quality, structure, and purpose of the reading experience (Laminack, 2016; Pinnell et al., 1995; Rasinski & Hoffman, 2003). Some studies have, in fact, reported limited or nonsignificant differences between read-aloud and silent-reading conditions. For example, Reed et al. (2014) found no significant differences in learning outcomes between teacher-led read-alouds and silent reading among twelfth-grade students. These findings suggest that the effectiveness of reading modalities may vary across instructional contexts and learner populations, underscoring the need for continued investigation in middle school and virtual learning environments.

Silent reading, a widely used practice in secondary education, is often valued for its potential to promote the development of independence, internalization of vocabulary, and the application of self-directed comprehension processes (Krashen, 2004). By engaging with text independently, students have opportunities to construct meaning at their own pace and apply previously learned reading strategies. However, compared with more interactive instructional approaches, silent reading generally provides fewer opportunities for teacher modeling, guided discussion, and immediate feedback during the reading process. Empirical research examining the comparative effects of read-alouds and silent reading at the middle school level remains limited and presents mixed findings, underscoring the need for further investigation in authentic classroom contexts (Shanahan et al., 2016).

Mixed findings reported in the literature suggest that no single reading modality is universally effective across all learners or instructional contexts. Rather, comprehension outcomes appear to be influenced by multiple factors, including developmental readiness, prior knowledge, text complexity, and the degree of instructional support provided during

reading activities (Hale et al., 2007; Prior et al., 2011). Researchers have, therefore, emphasized the importance of instructional approaches that balance opportunities for independent meaning-making with strategic guidance and scaffolding (Duke & Pearson, 2002; Fisher & Frey, 2008). Within gradual release of responsibility frameworks, teacher support is intended to decrease as students develop greater proficiency, allowing learners to assume increasing responsibility for comprehension while still receiving targeted assistance when needed (Fisher & Frey, 2008; Webb et al., 2019). These considerations are particularly relevant for middle school students, who are expected to navigate increasingly challenging texts while continuing to refine higher-order comprehension skills.

Regardless of instructional modality, researchers consistently emphasize the importance of opportunities for interaction, discussion, and scaffolded support during the comprehension process (Duke & Pearson, 2002; Santoro et al., 2008; Webb et al., 2019). The theoretical foundations of this study are informed by models that conceptualize reading comprehension as a multidimensional process involving decoding, linguistic comprehension, and cognitive integration. Frameworks such as the simple view of reading (SVR) and the construction–integration (CI) models highlight the importance of background knowledge, working memory, and inferential reasoning in constructing meaning from text (Gough & Tunmer, 1986; Kintsch, 1988). Additionally, Rosenblatt's transactional theory emphasizes the dynamic interaction between reader and text, suggesting that instructional practices incorporating guided interaction—such as read-alouds—may support deeper comprehension (Rosenblatt, 1978).

The literature further suggests that comprehension outcomes may depend not only on the reading modality itself but also on the quality of instructional support provided throughout the reading process. McGee and Schickedanz (2007) found that strategically embedded prompts before, during, and after reading can enhance comprehension. Such findings underscore the importance of scaffolding and responsive teaching practices, particularly for learners navigating increasingly complex texts. Instructional models that emphasize scaffolded learning and the gradual transfer of responsibility include the flexible gradual release of responsibility (FGRR) framework, which extends traditional gradual release models by recognizing that learners may require varying levels of support depending on instructional goals, text difficulty, and individual needs (Fisher & Frey, 2008; Webb et al., 2019). Within this framework, teachers model strategies, provide guided practice, facilitate collaborative learning, and gradually encourage independent application. Such an approach aligns closely with the goals of reading comprehension instruction by supporting students as they move from teacher-supported meaning-making toward increasingly autonomous engagement with text. These approaches have important implications for contemporary instructional settings, as educators increasingly seek ways to preserve meaningful interaction and collaborative learning within digital environments (Stoetzel & Shedrow, 2021). These practices, therefore, informed the design of the intervention in the current study and were selected based on their prominence within the literacy literature.

As educational settings continue to incorporate technology-enhanced instruction, questions emerge regarding how these forms of support can be effectively maintained in virtual environments. Researchers have explored how digital technologies can support literacy instruction and students' engagement with text across a variety of educational settings (Stoetzel & Shedrow, 2021). More recently, literacy scholars have examined how instructional practices that are traditionally implemented in face-to-face classrooms can be

adapted for online learning environments while maintaining opportunities for interaction and engagement (Flippo et al., 2021). Stoetzel and Shedrow (2021) described how interactive read-aloud practices can be adapted to virtual settings while preserving opportunities for discussion, teacher guidance, and student participation. Their work suggests that core elements of effective literacy instruction can be preserved across digital platforms when teachers intentionally facilitate interaction and meaning-making.

These perspectives align with sociocultural theories that emphasize learning through dialogue and guided interaction (Vygotsky, 1978) and with transactional views of reading that highlight active engagement between reader and text (Rosenblatt, 1978). Additionally, reports from the Muñoz-Najar et al. (2021) documented the use of digital read-alouds and remote literacy instruction during school closures, illustrating how technology-supported approaches were used to maintain access to literacy learning in diverse educational contexts. Virtual platforms, such as Pear Deck and Zoom, provide opportunities to deliver structured, interactive instruction through real-time communication, questioning, and student response activities, extending traditional instructional practices into virtual settings.

Despite the increasing use of virtual learning platforms, important gaps remain in understanding how different reading modalities support reading comprehension among middle schoolers, particularly within virtual learning environments. Although recent scholarship suggests that interactive literacy practices can be adapted to virtual settings, the evidence base remains limited, particularly for middle school learners. Most existing studies focus on early elementary populations (e.g., Beck & McKeown, 2001; Biemiller & Boote, 2006; Brabham & Lynch-Brown, 2002; Kindle, 2010; Wasik & Hindman, 2011), with limited attention to early adolescents who face more complex academic demands (e.g., Ariail & Albright 2005; Ivey, 2003). Furthermore, few studies have explored how traditional literacy practices function when delivered through synchronous digital platforms (e.g., Flippo et al., 2021).

In response to these gaps in the literature, the current exploratory study examined differences in reading comprehension performance between sixth-grade students in a Venezuelan school in either a virtual read-aloud or a silent reading condition. The study sought to explore whether reading modality was associated with differences in reading comprehension outcomes and whether those differences were reflected when students engaged independently with new text excerpts following the reading sessions.

To guide the investigation, the following research questions were addressed:

1. Does the modality of reading (read-aloud versus silent reading) impact changes in reading comprehension (from pretest to posttest) among middle school students?
2. Do students who participate in the virtual read-aloud condition demonstrate greater reading comprehension performance on new text excerpts presented in the posttest assessment than students who engage in silent reading?

Method

Research Design

This study employed an experimental, quantitative, exploratory design to examine differences in reading comprehension performance among sixth-grade students in one of

two reading modalities: virtual read-alouds and silent reading conditions. Equivalent text excerpts and identical assessment procedures were used across groups. A pretest–posttest design was implemented to compare comprehension outcomes between groups under controlled virtual conditions while maintaining an authentic classroom setting. This design allowed for the examination of reading comprehension performance across reading modalities while generating preliminary evidence within a natural educational context.

Participants

The entire sixth-grade level (N = 28) of native-Spanish speakers at Escuela Básica Nacional Andrés Eloy Blanco in Maracay, Venezuela was invited to participate. All sixth-grade students were taught by the same classroom teacher, which allowed consistency in instructional context. Participants, 13 male and 15 female, were 10-13 years old (M = 11.39, SD = 0.50) and were randomly assigned to either a virtual read-aloud condition (n = 14) or a silent reading condition (n = 14). Of the original pool, 15 students attended all four sessions of the study and provided both pretest and posttest data, resulting in a final sample of 8 participants in the read-aloud group and 7 in the silent reading group. Participation followed established ethical procedures, including institutional approval, informed consent from parents and guardians, and assent from students.

In order to further describe the participants and to provide contextual information about their literacy backgrounds, a short demographic and educational background survey was administered. The survey revealed that 60% of students had received some form of prior reading support—either at home or in school—while 40% had not. Participants also reported varying levels of literacy engagement: 40% reported reading daily, 40% several times a week, 0% once a week, and 13% rarely or never. Regarding access to reading materials, 67% of participants had physical books at home, 33% relied on educational websites, and 0% had access to digital reading devices such as tablets or e-readers. This suggests that the majority of participants received reading instruction or reading intervention outside of their regular school curriculum, frequently engaged in reading activities outside of schoolwork, and relied primarily on printed books rather than digital formats.

Procedure

The study was conducted over four class sessions of 45 minutes each. The materials were delivered via Pear Deck, an interactive digital learning platform integrated with Google Slides that allowed participants to access reading materials, respond to comprehension activities, and submit assessment responses in a structured virtual environment. The materials were identical for both groups.

During the first session, all students completed a demographic and educational background survey followed by a pretest to establish baseline comprehension performance using excerpts of Chapters 1-6 of the Spanish version of "A Long Walk to Water" ("*Una larga travesía hasta el agua*") by Linda Sue Park.

In the subsequent two sessions, students participated in their assigned reading condition using excerpts of Chapters 7-12 of the text. The read-aloud group engaged in teacher-led virtual read-aloud sessions that included pre-reading, during-reading, and post-reading comprehension scaffolds (McGee & Schickedanz, 2007) designed to support engagement with the text during the session. During read-aloud sessions, the researcher

periodically paused the reading to facilitate discussion and comprehension monitoring aligned with the lesson objectives. The silent reading group read the same text excerpts that included pre-reading, during-reading, and post-reading comprehension scaffolds independently while being supervised by the classroom teacher, who monitored participation but did not provide instructional support.

In the final session, all students completed the posttest using Chapters 13-18 of the text under the same conditions (i.e., same teacher, session time, setting, and delivery method) as the pretest. All sessions were conducted using Zoom, and access to reading materials and assessments via Pear Deck was controlled to ensure consistency across participants. Efforts were made to minimize external interruptions throughout the study.

Instruments

A brief five-item demographic and background educational survey was administered prior to the pretest to collect descriptive information, including students' reading experience with relation to reading frequency, prior reading support, and access to reading materials.

Reading comprehension was assessed using pretest and posttest measures consisting of 12 multiple-choice items aligned with grade-level literacy standards. The assessments and reading materials were adapted from EL Education's "A Long Walk to Water" curriculum materials, which are designed to support middle school literacy instruction and comprehension development. The instruments were reviewed for clarity, developmental appropriateness, and alignment with target skills. Both assessments (Sessions 1 and 4) required students to determine meaning, make inferences, identify textual evidence, determine themes or central ideas, identify the narrator's point of view, describe plot development, and use vocabulary in context. Reading activities (Sessions 2 and 3) for both groups included pre-reading prompts, guided comprehension questions, evidence-based response tasks, vocabulary support, theme identification, and point-of-view activities. The read-aloud group was additionally provided structured discussion opportunities designed to support engagement with the text.

Excerpts were extracted from Chapters 1–6 for the pretest, Chapters 7–12 for the reading materials, and Chapters 13–18 for the posttest. Across the pretest, posttest, and reading materials, excerpts ranged in length from 1 to 3 sentences (M = 1.25) and from 5 to 30 words (M = 13.72).

Assessments and reading materials were administered through Pear Deck, integrated with Google Slides, to facilitate real-time student responses in a virtual setting. Pretest and posttest responses were scored with correct answers receiving one point and incorrect answers receiving zero points, resulting in a maximum possible score of 12 points on each assessment.

Data Analyses

Data were analyzed using descriptive and inferential procedures. Descriptive statistics included means, standard deviations, and score distribution for each reading condition. Prior to conducting inferential analyses, assumptions of normality and homogeneity of variance were examined to assess the appropriateness of the selected statistical procedures (Field, 2017).

Independent-samples t-tests were conducted to compare mean changes (pretest to posttest) in reading comprehension performance between instructional conditions. Because

of the small sample size, bootstrapped confidence intervals based on 1,000 resamples were calculated to provide more robust estimates of the mean difference, *p*-values for the independent samples *t*-test, and confidence intervals.

In addition, an ANCOVA was performed to compare posttest reading comprehension performance while controlling for baseline pretest scores. These analyses were selected to examine differences between groups with new text excerpts while accounting for potential initial variation in reading comprehension levels.

Effect sizes (Cohen's *d* and partial eta-squared) were also computed to assess the practical significance of observed differences between instructional conditions. Statistical significance was assessed at an alpha level of .05. All analyses were conducted using IBM SPSS Statistics.

Results

Assumption checks were conducted prior to performing the independent-samples *t*-test. Normality of mean-change scores was assessed using Shapiro-Wilk tests and visual inspection of Q-Q plots. The assumption was met in both the intervention (read-aloud) and comparison (silent reading) groups. Levene's test indicated that homogeneity of variances was also satisfied. Examination of score distributions and potential outliers revealed no cases requiring removal.

Descriptive analysis indicated that pretest scores ranged from 7 to 12 ($M = 9.67$, $SD = 1.63$), reflecting relatively consistent baseline comprehension among participants. Posttest scores showed lower overall performance, ranging from 0 to 10 ($M = 6.53$, $SD = 2.83$), along with increased variability. The mean difference between pretest and posttest scores was −3.13 ($SD = 3.85$), indicating an overall decline in comprehension performance across the sample.

To answer Research Question 1, an independent-samples *t*-test was conducted to inferentially compare mean differences between groups (see Table 1). Results indicated that the difference was not statistically significant, $t(13) = -1.73$, $p = .107$. However, a large effect size was observed (Cohen's $d = 0.90$), suggesting a practically meaningful difference favoring the read-aloud condition despite the absence of statistical significance.

Table 1
Descriptive Statistics and Independent-Samples t-Test Results

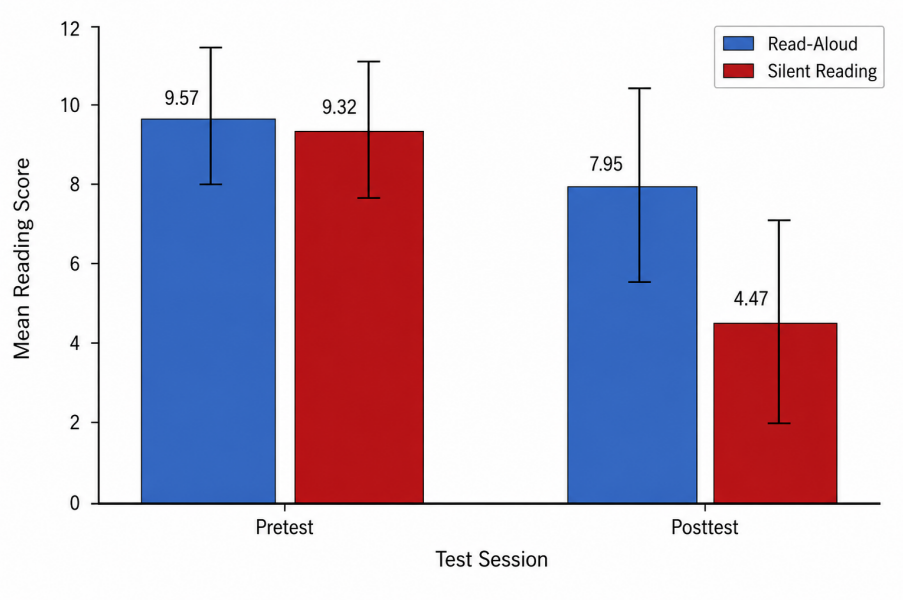
	Pretest *M* (*SD)*	Posttest *M* (*SD*)	Difference M (SD)	95% CI for Difference	*t(*13)	p	*p*	Cohen's *d*
Silent Reading	9.32 (1.56)	4.47 (2.68	-4.86 (4.85)	[-9.35, -0.37]				
Read-Aloud	9.57 (1.61)	7.95 (2.34)	-1.63 (1.99)	[-3.29, 0.04]				
Overall	9.67 (1.63)	6.53 (2.83)	-3.13 (3.85)	[-5.26, -1.00]				
Between-Groups Comparison				[-6.90, 0.72]	1.73	-	107	0.90

Note. Twenty-eight sixth-grade students were originally enrolled and assigned to the reading conditions, but only 15 students (8 in the read-aloud group, 7 in the silent-reading group) completed both the pretest and posttest and were therefore included in the analyses. Scores represent the comprehension performance on a 0–12-point scale. Negative mean differences indicate lower scores from pretest to posttest. The independent-samples *t*-test compared mean differences between groups. Cohen's *d* of 0.90 represented a large observed effect size.

Group comparisons revealed descriptive differences in the magnitude and variability of score changes. As shown in Figure 1, the read-aloud group demonstrated a smaller pretest-to-posttest mean decline (*M* = −1.63, *SD* = 1.99), while the silent reading group showed a larger decline (*M* = −4.85, SD = 4.86). In addition, the read-aloud group exhibited more consistent performance, whereas the silent reading group showed greater variability in outcomes, as reflected in the difference between standard deviations as well as in the wider confidence intervals (CI) observed for the silent-reading condition (95% CI [-9.35, -0.37]) in comparison to the read-aloud group ([-3.29, 0.04]) on the posttest.

Figure 1

Pretest–Posttest Scores by Group

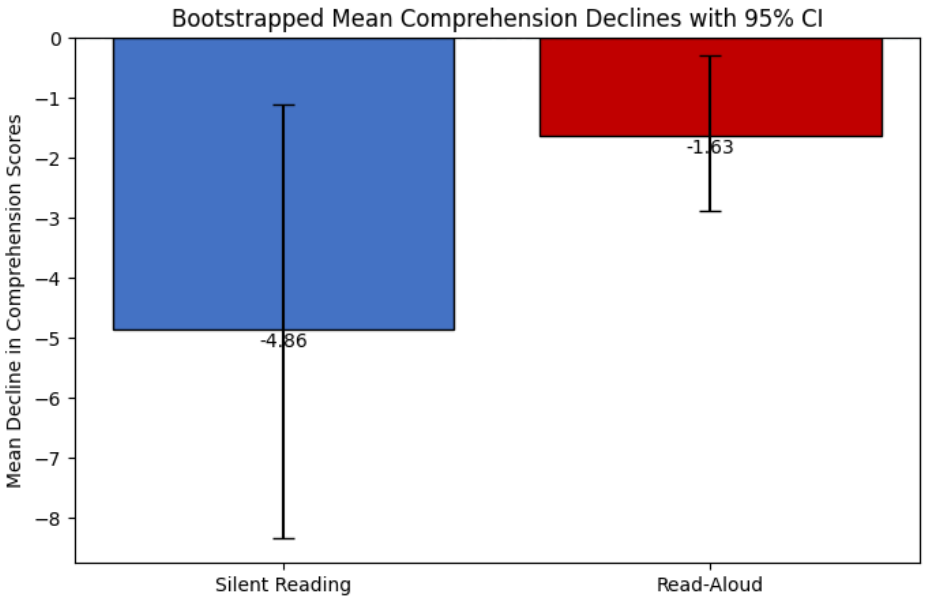


Note. This bar chart displays the mean pretest and posttest scores for the read-aloud and silent-reading groups, with blue representing the read-aloud group, and red, the silent reading group, for pretest and posttest means, error bars represent ±1 standard deviation.

To address the limitations of the small sample size, bootstrapping procedures (1,000 iterations) were conducted. The results were consistent with the original analysis. The bootstrapped estimate of the mean difference was -3.23 (p = .139) with a 95% BCa confidence interval of [-7.00, 0.88]. Because this interval included zero, there was no evidence of a statistically significant mean difference between groups. However, the effect size was large (Cohen's d = 0.90), suggesting a potentially substantial practical difference. Specifically, the read-aloud group showed a smaller mean decline (M = −1.63, 95% bootstrap CI [−2.89, −0.29]) compared to the silent reading group (M = −4.86, 95% bootstrap CI [−8.33, −1.11]), as illustrated in Figure 2. Nevertheless, the relatively wide confidence interval around the mean difference (95% CI [-7.00, 0.88]) indicates considerable uncertainty, likely due to low statistical power.

Figure 2

Bootstrapped Mean Declines and 95% Confidence Intervals



Note. The chart compares bootstrapped mean comprehension declines and 95% confidence intervals for both groups, highlighting the smaller average decline observed in the read-aloud condition.

To answer Research Question 2, an analysis of covariance (ANCOVA) was conducted to compare posttest reading comprehension of new text excerpts while controlling for baseline pretest scores. As shown in Table 2, there was no statistically significant difference between reading conditions after adjusting for pretest performance, $F(1, 12) = 0.18$, $p = .682$, partial $\eta^2 = .015$. The ANCOVA revealed a small effect size, indicating that the reading condition accounted for only about 1.5% of the variance in posttest scores after controlling for baseline performance. The pretest effect, on the other hand, exhibited a large effect (partial $\eta^2 = .163$), which shows that the students' starting scores accounted for 16.3% of the variance in their final score, suggesting that pretest scores were a better predictor of posttest performance than the reading condition itself. These findings should be interpreted cautiously, however, given the small sample size, which reduces the reliability of the effect size estimates and increases the risk of a Type II error. Although the adjusted means were slightly higher for the read-aloud group ($M = 6.76$) than the silent-reading group ($M = 6.13$), the difference was not statistically significant.

Table 2
ANCOVA for Posttest Reading Comprehension

Source	*df*	*F*	*p*	partial η^2
Pretest (Covariate)	1	2.34	.152	.163
Group (Condition)	1	0.18	.682	.015
Error	12			

Note. N = 15. Dependent variable = posttest reading comprehension score. Pretest scores were included as a covariate. *p*-values are two-tailed.

Discussion and Conclusions

The purpose of this experimental, exploratory study was to examine differences in reading comprehension outcomes between middle school students who participated in a virtual read-aloud intervention and those who engaged in silent reading. Primary results indicated no significant difference between groups in pretest-to-posttest change scores or in posttest performance after controlling for pretest scores. These findings support studies such as Reed et al. (2014), who reported no significant difference in learning outcomes between teacher-led read-alouds and silent reading among high school students over a one-week intervention period. The present study extends this literature by suggesting that brief (two-day) read-aloud interventions may not produce statistically significant gains in reading comprehension among middle school students either.

However, given the limited number of participants and the large effect size favoring the read-aloud condition (discussed below), these null results should be interpreted conservatively. In the future, research should examine whether more frequent or longer-term read-aloud sessions yield different outcomes, though both Pinnell et al. (1995) and Rasinski and Hoffman (2003) have argued that the quality and structure of read-alouds may ultimately matter more than their frequency.

Despite differences between groups not being statistically significant, secondary findings revealed a large effect size (Cohen's d = 0.90) and consistent descriptive patterns across analyses. Specifically, students in the read-aloud condition demonstrated smaller declines in comprehension performance, lower variability, and greater consistency compared with students in the silent-reading condition. This pattern suggests a potentially meaningful practical difference between reading conditions associated with structured read-aloud instruction at the middle school level. The findings align with existing literature emphasizing the role of teacher modeling and scaffolded instruction in supporting comprehension (Fisher & Frey, 2008; Flippo et al., 2021; Ivey & Broaddus, 2001). Read-alouds, particularly when combined with structured interaction, provide opportunities for students to engage with text through guided support–an important component of effective comprehension instruction (Duke & Pearson, 2002).

This interpretation is consistent with constructivist and sociocultural perspectives, which highlight the importance of dialogic interaction and mediated learning in

comprehension development (Vygotsky, 1978; Rosenblatt, 1978). At the same time, the findings should not be interpreted as diminishing the potential value of silent reading. Prior research has suggested that independent reading opportunities may support reader autonomy, self-regulation, and the application of comprehension strategies during engagement with text (Krashen, 2004; Trelease, 2013). The absence of statistically significant differences likely reflects the short duration of the intervention, small sample size, and variability in student performance. These factors limited statistical power and underscore the need for larger studies. As such, the present results should be considered exploratory evidence of performance patterns across instructional reading conditions rather than definitive evidence of causal impact.

Notably, several limitations should be considered when interpreting these results. The small sample size (N = 15 for matched analysis) reduced statistical power and limited generalizability. Also, the short duration of the intervention (two instructional sessions) may have been insufficient to produce measurable gains in comprehension. Additionally, contextual factors such as slowed internet connectivity and limited digital literacy may have affected students' engagement with the text and caused fragmented participation. Likewise, a virtual format may not have adequately supported students who required more hands-on or personalized instruction. Furthermore, the study did not study the influence of individual differences (e.g., motivation, learning preferences, and socioeconomic background) was also not examined. Finally, the intervention was conducted near the end of the school year, when students were managing exams and extracurricular activities–factors that may have reduced concentration and participation, particularly during posttesting.

Despite these limitations, the study contributes to the limited body of research examining virtual read-aloud versus silent-reading instruction among middle-school learners. The findings suggest that structured read-alouds may warrant further investigation as a literacy support in virtual learning environments.

Future research involving larger and more diverse samples, extended intervention periods, improved technological familiarity, and consideration of individual differences among participants is needed to better understand the influence of reading modality on comprehension and its implications for virtual literacy instruction. Incorporating mixed methods designs (as did, e.g., Fuchs & Fuchs, 2006; Trelease, 2013) may provide a more comprehensive understanding of students' interactions with text–such as their application of reading strategies following each modality–and their perceived engagement during the study period.

As virtual and technology-supported literacy instruction continues to expand, further research is needed to clarify the conditions under which different reading modalities may be associated with reading comprehension outcomes among middle school learners. Given the exploratory nature of the study, the findings are best viewed as preliminary evidence intended to inform future investigation rather than to establish definitive conclusions regarding instructional effectiveness.

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