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EXAMINING THE EFFECTS OF READING MODALITY AND PASSAGE GENRE
ON READING COMPREHENSION IN MIDDLE SCHOOL STUDENTS

by

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A Dissertation

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Abstract

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The purpose of the present study was to examine the effects of reading modality (oral versus silent) and passage genre (narrative versus expository) on the reading comprehension of middle school students. A normative sample of sixth- and seventh-grade students ($N = 175$) read narrative and expository texts from the Qualitative Reading Inventory, Fifth Edition (QRI-5; Leslie & Caldwell, 2011) aloud or silently and then answered questions about what they read. General reading skill was assessed by the Test of Silent Contextual Reading Fluency, Second Edition (TOSCRF-2; Hammill, Wiederholt, & Allen, 2014). A 2 (passage genre) X 2 (reading modality) mixed between-within subjects ANOVA was conducted separately by grade. Findings suggest that text genre influenced reading comprehension across both sixth- and seventh-grade students. Not surprisingly, expository text was more challenging than narrative text in terms of students' understanding. Importantly, reading modality was not found to influence the reading comprehension of seventh-grade students, and only approached significance for the sixth-grade students. These results suggest that although students may have effectively transitioned to being independent silent readers, additional pedagogical support may be required to develop effective strategies for understanding expository text.

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Introduction

As students transition to middle school (i.e., sixth, seventh, and eighth grade), curricular demands increase dramatically. Not only are students expected to be proficient silent readers, they are also expected to read far more informational or expository texts (Misulis, 2009). When children first learn how to read, they are taught to read aloud. Oral reading is a necessary and beneficial technique for initial reading instruction, as it allows for the reinforcement of letter–sound correspondence (Kuhn & Schwanenflugel, 2007) and the use of both reading and listening comprehension skills to facilitate understanding (Hoover & Gough, 1990; Kuhn & Schwanenflugel, 2007). However, as children mature into more advanced readers, they should be able to read silently with equivalent comprehension (Hiebert, Samuels, & Rasinski, 2012).

In addition to the mode that is utilized to teach reading (i.e., oral), the genre of the text is also an important construct in initial literacy instruction, which typically utilizes child-friendly, fictional narrative texts (Smith, 2003b). One of the primary reasons that educators use narrative texts to teach reading is because this genre is widely available. Most popular basal reading series use a fictional narrative format (Caswell & Duke, 1998). In addition to the convenience of abundant narrative materials, educators also use these texts because of the traditional theory that children think in narrative form (Fox, 1989). Despite the prominence of fictional narrative text during the early elementary school years, research suggests that both fiction and nonfiction books should be used in teaching reading (Caswell & Duke, 1998; Hiebert et al., 2012). As children progress from elementary to middle school, they are expected to read greater amounts of informational text silently, with proficiency. Despite these increased expectations, academic support is rarely provided to students regarding how to silently read and extract information independently (Hiebert et al., 2012). It is not clear whether middle school students possess the

reading skills necessary to successfully navigate the middle school curriculum. The purpose of the present study was to investigate the influence of reading modality and text genre on the reading comprehension of middle school students.

Literature Review

Passage Comprehension after Oral and Silent Reading

Studies examining the effect of reading modality on comprehension in the primary school years (i.e., first through third grade) have typically done so without considering passage genre as a variable. Results generally indicated that younger readers comprehend text better after oral reading as compared to silent reading or listening (Elgart, 1978; Fletcher & Pumfrey, 1988; Kragler, 1995). Much like their younger counterparts, fourth-grade struggling readers were also found to benefit from reading aloud when they encountered more challenging text (Burge, 1983). Other studies collapsed student data across multiple grade levels, precluding the examination of potentially important grade-level trends (e.g., Fuchs & Maxwell, 1988; McCallum, Sharp, Bell, & George, 2004; Miller & Smith, 1985). Not surprisingly, results from these studies vary considerably. One study found that oral reading facilitated comprehension better than silent reading (Fuchs & Maxwell, 1988), whereas another investigation found no significant difference across reading modality in terms of comprehension after controlling for reading skill (McCallum et al., 2004). In another study, the relation between reading comprehension and reading modality was found to be moderated by reading skill (Miller & Smith, 1985). Specifically, low skill readers scored higher on questions following oral versus silent reading; medium skill readers read silently more proficiently than low skill readers, and high skill readers performed well after engaging in both modalities.

Importantly, a handful of cross-sectional studies involving multiple grade levels have examined the effect of reading modality on comprehension separately by grade. Prior and Welling (2001) utilized a sample of second- through fourth-grade students. Results indicated that second-grade students performed poorly across both modalities, whereas third- and fourth-grade students comprehended better after reading orally. The literature examining reading modality in post-elementary school students is particularly relevant to the current study. Prior et al. (2011) replicated and extended the Prior and Welling (2001) study using a sample of 173 first- through seventh-grade students. The Reading Recognition sub-test of the Peabody Individual Achievement Test-Revised (PIAT-R; Markwardt, 1998) was used to measure reading ability, and grade-level passages from the Ekwall/Shanker Reading Inventory (ESRI; Shanker & Ekwall, 2000) were used to assess reading comprehension. Participants read passages orally and silently and then answered comprehension questions about each passage. Results portrayed a clear grade-related trend in which oral reading was the superior modality for comprehension in first through fifth grades. In sixth grade, neither mode was superior to the other in terms of comprehension. Finally, in seventh grade, silent reading emerged as the superior mode for comprehension. Although the ESRI provides both narrative and expository passages, information regarding the passage genre was not provided.

Hale et al. (2007) examined the influence of reading modality on comprehension with elementary and high school students. A sample of 93 fourth-, fifth-, tenth-, eleventh-, and twelfth-grade students read a series of grade-level passages from the Timed Reading series (Spargo, 1989) both orally and silently, and then answered questions about each passage. Like the Prior et al. (2001) study, information regarding passage genre was not provided. Inconsistent with the broader literature, results indicated that across all grade levels, comprehension was

significantly higher when students read passages aloud as opposed to silently. However, it should be noted that many of the elementary students (39%) and secondary students (57%) in this study scored below grade level based on their Woodcock-Johnson III Tests of Achievement (Woodcock, McGrew, & Mather, 2001) Broad Reading cluster grade equivalent scores. These surprising results could be attributed to the relatively poor reading skills of the participants.

Dickens and Meisinger (2015) recently examined the effects of skill level (normal versus at risk) and reading modality (oral versus silent) on reading comprehension in a sample of 74 sixth-grade students. Skill level was measured by the Test of Word Reading Efficiency, Second Edition (TOWRE-2; Torgesen, Wagner, & Rashotte, 2012). Age-referenced standard scores were used to determine the reading skill level of each participant and to establish groups of normal readers (i.e., those with standard scores ≥ 95) or at risk readers (i.e., those with standard scores ≤ 85). Reading comprehension was measured by using the Qualitative Reading Inventory, Fifth Edition (QRI-5; Leslie & Caldwell, 2011); an assessment instrument that contains narrative and expository passages at each grade level. Students were asked to read two QRI-5 passages and answer comprehension questions; one passage was read silently and the other aloud. Both normal and at risk readers demonstrated better comprehension after reading text orally as compared to text read silently. Although it was not the aim of the study to examine text genre, a clear trend emerged across the narrative and expository passages. Students performed better on reading comprehension tasks after reading narrative passages versus expository passages. Results from this study suggest that text genre may be an important variable to study when examining the construct of reading comprehension.

Narrative versus Expository Text

Children are typically exposed to a plethora of narrative text even before they are formally taught how to read. Narrative texts (as in stories, poems, plays, etc.; Duke & Kays,

1998) are often easier to understand because they are agent-oriented, focusing on people, their actions, and motivations. These texts report events in a progressive context with a beginning, middle, and end (Berman & Nir-sagiv, 2007), and usually follow one story structure that students are used to reading (e.g., character, setting, plot). As children mature into more proficient readers, they *read to learn* (Chall, 1983, 1996); that is, they are expected to learn new content area information from more complex, often expository, text.

Expository texts present several new challenges that are far different than the challenges of narrative texts (Hall-Kenyon & Black, 2010). Expository texts are topic-oriented, focusing on concepts and issues (e.g., text books, news articles), and often express ideas, claims, and arguments in terms of the rational interrelations among them (Berman & Nir-sagiv, 2007). Expository texts are often denser conceptually, less personal, contain more technical terminology and unfamiliar vocabulary, require more background knowledge, and are often above the students' frustration reading levels (Jennings, Caldwell, & Lerner, 2006). Expository texts often contain content-specific vocabulary that may be foreign to the reader, and the text may lack the background information needed for the reader to make sense of the new information (Hall, 2004). Additionally, expository texts are organized in many different ways and require unique information-gathering skills (Duke & Kays, 1998), or the ability to take in information without interpreting it through a story line. With expository text, readers must not only learn where and how to find meaning, but must also determine how to apply what they have read (Hall-Kenyon & Black, 2010).

Given the focus on narrative text during reading instruction (Duke & Kays, 1998; Kletzien & Dreher, 2004; Smith, 2003a), students may not be fully prepared for the challenges associated with reading expository text (Sanacore & Palumbo, 2009). Students are often

expected to read expository texts and gain meaning from them independently or without sufficient support (Hall-Kenyon & Black, 2010). Many educators assume that the skills that helped children initially read picture books and simple narratives will continue to facilitate their understanding, regardless of whether the text is narrative or expository (Hall-Kenyon & Black, 2010). However, many children who have had little or no difficulty reading narrative texts struggle when they are expected to read expository materials (Duke & Kays, 1998).

Although the expectation is clear that late elementary and middle school students should be reading expository text on a consistent basis (Best, Rowe, Ozuru, & McNamara, 2005), research supports that even earlier exposure to expository text has been found to be beneficial (Duke & Kays, 1998; Smith, 2003a). Early exposure to informational, expository text not only prepares children for encounters with these types of texts later in schooling, but also teaches them about the world in which they live (Yopp & Yopp, 2000). Additionally, expository texts serve as a catalyst for literacy development by building upon the information that children already know (Smith, 2003b). In other words, when children possess background knowledge about a certain topic, reading expository text facilitates deeper comprehension and even a stronger ability to decode low-frequency words (Caswell & Duke, 1998). Finally, some children prefer reading expository text because it often addresses their interests and questions (Duke & Bennett-Armistead, 2003).

Many researchers have looked at the effects of narrative and expository text on comprehension but have either not considered modality as a variable or have limited modality to oral reading and listening comprehension, excluding silent reading altogether. Listening comprehension is often used to measure comprehension skills for emergent readers who have not yet acquired the reading skills necessary to support reading comprehension. Kraemer, McCabe,

and Sinatra (2012) investigated the effects of listening to expository text on the listening comprehension and book choice of 77 first-graders. Participants in the experimental group ($N = 37$) heard expository read-alouds over a four-week period, whereas participants in the control group ($N = 40$) received no intervention, following their teacher's normal read-aloud schedule. Results indicated that both before and after the intervention, both groups significantly preferred expository text compared to narrative text, even though participants in the control group heard narration almost exclusively during routine classroom read-alouds. Despite significantly stronger skills than the control group in narrative comprehension at pretest, the experimental group showed a significant increase in expository listening comprehension at posttest. These findings support the notion that exposure to expository texts in the early grades may help prepare young children for the informational, expository reading that is required later in schooling.

The preponderance of research examining the relations between text genre and reading comprehension has involved oral rather than silent reading. Kucer (2011) examined the retellings of two groups of fourth-graders after reading a narrative ($N = 34$) or expository ($N = 35$) text aloud. The narrative text was taken from chapters of the book, *Who Stole the Wizard of Oz?* (Avi, 2005), and the expository text was taken from chapters of the book, *Lands of Rock* (Evans, 2003). Readers read the narrative or expository text aloud and then engaged in a free recall or probe task. Retold clauses that did not match those in the text were classified using a retelling taxonomy: substitution, addition, summary, conflict, rearrangement, or omission. Both groups of readers went beyond the information given (approximately 18% of the time for the narrative text and 59% of the time for the expository text). Narrative retellings contained a high percentage of conflicts, with very few substitutions, summaries, or rearrangement of ideas. In contrast, expository retellings had significant numbers of substitutions and summaries, with

fewer additions and rearrangements. It was hypothesized that reader background knowledge accounted for the variation in the retelling profiles and that this background paradoxically both facilitated and inhibited understanding.

Sáenz and Fuchs (2002) examined the effects of narrative versus expository text read aloud on reading comprehension in a sample of 111 high school students who were diagnosed with learning disabilities. Students orally read two narrative passages from Monitoring Basic Skills Progress (Fuchs, Hamlett, & Fuchs, 1997) and two expository passages from the Timed Reading series (Spargo, 1989), both of which were adapted to approximately a fifth-grade level. After orally reading each passage, the participants were asked 10 comprehension questions per passage; 8 questions were literal and 2 were inferential. Results indicated that students had more difficulty with expository text than with narrative text in terms of reading fluency and comprehension; however, effects for comprehension were mediated by the type of question asked. Students demonstrated similar literal comprehension on narrative and expository passages but superior narrative inferential comprehension to expository inferential comprehension.

In addition to narrative and expository text, some researchers have examined other text genres. For example, Eason, Goldberg, Young, Geist, and Cutting (2012) compared the performance of 126 children, ages 10-14 years, in comprehending narrative, expository, and functional text after oral reading. Functional text is text that is encountered in everyday life, such as instructions on how to complete a task (e.g., how to complete a school assignment). Functional passages were found to be easier to comprehend than both narrative and expository passages, but there was no difference between accuracy on narrative and expository passages. The authors indicated that these findings could have been attributed to methodological issues. It

was suggested that high levels of cohesiveness (i.e., the extent to which parts of a text relate to each other) among the expository texts may have compensated for less-familiar topics, thereby inflating comprehension scores. Additionally, the authors collapsed the data across the age groups; therefore, age-related trends could not be observed.

Best, Floyd, and McNamara (2008) utilized a sample of 61 third-grade students to examine the effects of reading decoding skills and world knowledge on the comprehension of narrative and expository texts. The narrative text, *Orlando*, was taken from Addison-Wesley's *Phonics Take-Home Reader, Grade 2* (1998), and the expository text, *Needs of Plants*, was taken from McGraw-Hill's *Science, Grade 2* (Moyer, Daniel, Hackett, Baptiste, & Stryker, 2000). Participants read the narrative text and expository text silently, and then answered comprehension questions about each text by using a free recall prompt, three cued recall prompts, and 12 multiple-choice questions. In addition, selected tests from the Woodcock-Johnson III Tests of Achievement (Woodcock et al., 2001) were used to assess world knowledge and reading decoding skills. As would be expected with a third-grade sample, comprehension for the narrative text was found to be superior to that of the expository text, and the effects of readers' world knowledge and decoding skills on reading comprehension depended on whether the text was narrative or expository. Comprehension of the narrative text was most influenced by reading decoding skills, whereas expository text comprehension was most influenced by world knowledge.

Cervetti, Bravo, Hiebert, Pearson, and Jaynes (2009) utilized a sample of 74 fourth-grade students to examine their fluency, comprehension and recall of concepts, and preference of either informational text or fictional narrative text. The authors used two science topics (i.e., the life cycle of a snail and the formation of sand) to develop the fictional narrative and informational

text for each topic. All students read both the snail and sand passages, but the genre of the passage (informational text or fictional narrative text) differed across participants. The participants read the majority of the text silently and a portion of the text aloud (either the first 100 or last 100 words of the text). Students were asked to retell the text and then answer comprehension questions. Finally, the participants were asked to indicate which of the texts they preferred and to explain the reason for the preference. Results indicated that participants' accuracy and reading rate were comparable across the two genres; however, the potential influence of reading modality on comprehension or text preference was not examined. Surprisingly, participants answered more comprehension questions correctly and recalled more key concepts from the informational text versus the fictional narrative text; however, a preference for one type of text over the other was not found.

Purpose of the Study

Although many studies have investigated the effects of narrative and expository text on reading comprehension, none have taken into account oral and silent reading fluency in conjunction with text genre. Similarly, many studies have investigated the effects of reading modality on reading comprehension without considering passage genre as a variable. The current study replicated and extended Dickens and Meisinger's (2015) previous work by investigating whether sixth- and seventh-grade students were able to accurately comprehend narrative and expository texts after oral and silent reading while controlling for reading skill. The following research questions guided the study: (a) how does modality, oral versus silent, affect reading comprehension, (b) how does text genre, either narrative or expository, affect reading comprehension, (c) how do text genre and reading modality interact to affect reading comprehension, and (d) are similar trends regarding the effects of modality and text genre observed across sixth- and seventh-grade students? Considering the limitations of the current

literature, in light of the importance of proficient silent reading and the ability to understand expository text for later educational and professional attainment, this topic warranted further examination.

Method

Participants

Eighty-eight sixth graders and 87 seventh graders participated in the study ($N = 175$). The average age of the sixth-grade students was 12 years, 3 months (range 11 years, 1 month to 13 years, 6 months), and the average age of the seventh-grade students was 13 years, 3 months (range 12 years, 5 months to 14 years, 5 months). The sixth-grade participants were 53% African American, 43% Caucasian, and 3% Hispanic; 53.4% were female. The seventh-grade participants were 49% African American, 48% Caucasian, and 2% Hispanic; 51.7% were female. Approximately 59% of the students at the participating school qualified for free or reduced cost lunch. All participants attended general education classes; information regarding whether any students were enrolled in special education or had been retained was not available.

Measures

General reading skill. *The Test of Silent Contextual Reading Fluency*, Second Edition (TOSCRF-2; Hammill et al., 2014) involves many different aspects of reading (i.e., word identification, word meaning, word building, sentence structure, comprehension, and fluency), and is therefore considered a screener of general reading skill. The TOSCRF-2 was group-administered in this study. A graduate student examiner observed the first author group-administer the TOSCRF-2 and completed an integrity checklist for half of the (i.e., all of the sixth grade) group administration sessions to check for procedural adherence (see Appendix A); 100% procedural adherence for the sixth-grade group administrations was achieved. Students were presented with a series of short passages that increased in difficulty. All words on the

TOSCRF-2 are printed in uppercase without any spaces or punctuation. Students were asked to draw a line between the boundaries of as many recognizable words as possible within three minutes. Some words contain smaller words, making it necessary for the examinee to denote the word that makes sense within the sentence. The TOSCRF-2 yields index scores ($M = 100$, $SD = 15$) that were used to determine the reading skill level of each participant and originally served as a covariate in the analyses. Reported test–retest reliability ranged from .79 to .94, whereas alternate form-delayed reliability ranged from .81 to .86. Validity estimates ranged from .41 to .89 with other validated measures of reading (Hammill et al., 2014).

Reading comprehension. *The Qualitative Reading Inventory, Fifth Edition (QRI-5;* Leslie & Caldwell, 2011) is an informal reading inventory assessment instrument that contains narrative and expository passages at each grade level. There are seven sixth-grade level passages in the QRI-5: three literature passages (“Pele,” “Abraham Lincoln,” and “The Early Life of Lois Lowry”), two social studies passages (“The Lifeline of the Nile” and “Building Pyramids”), and two science passages (“Temperature and Humidity” and “Clouds and Precipitation”). The QRI-5 authors used the mean of three readability formulas (the New Dale-Chall readability formula, the Fry Readability, and the Flesch Grade Level) to estimate the readability levels of each passage. Based on these formulas, the mean readability levels for each passage was as follows: “Pele” was 5.6, “Abraham Lincoln” was 5.7, “The Early Life of Lois Lowry” was 6.6, “The Lifeline of the Nile” was 6.9, “Building Pyramids” was 6.6, “Temperature and Humidity” was 7.5, and “Clouds and Precipitation” was 6.2.

The narrative and expository sixth-grade passages selected for the study were “The Early Life of Lois Lowry” (mean readability level 6.6, 591 words) and “Clouds and Precipitation” (mean readability level 6.2, 528 words). These passages were selected because of their

comparable readability levels and word lengths. The other sixth-grade passages provided in the QRI-5 were eliminated because their readability levels were too low (i.e., “Pele,” 5.6 and “Abraham Lincoln,” 5.7) or word length was much shorter than the other passages (i.e., “Building Pyramids,” 303 words and “The Lifeline of the Nile,” 295 words). “Temperature and Humidity” (readability level 7.5) was eliminated because it was suspected that this passage could potentially be too difficult for sixth-grade students to read.

The QRI-5 does not include a set of passages specifically for seventh grade; rather, an upper middle school passage set is provided. There are six reading passages at the upper middle school level in the QRI-5: two literature passages (“Biddy Mason” and “Malcolm X”), two social studies passages (“Immigration – Part 1” and “Immigration – Part 2”), and two science passages (“Life Cycles of Stars – Part 1” and “Life Cycles of Stars – Part 2”). The mean readability levels for each upper middle school passage was as follows: “Biddy Mason” was 4, “Malcolm X” was 7.2, “Immigration – Part 1” was 9.5, “Immigration – Part 2” was 7.8, “Life Cycles of Stars – Part 1” was 7.5, and “Life Cycles of Stars – Part 2” was 7.5.

The narrative and expository seventh-grade passages selected for the study were “Immigration – Part 2” (readability level 7.8, 417 words) and “Life Cycles of Stars – Part 2” (readability level 7.5, 421 words). Like the sixth-grade selections, these passages were selected because of their comparable readability levels and word lengths. The other seventh-grade passages provided in the QRI-5 were eliminated because readability level was too low (“Biddy Mason,” readability level 4), readability level was too high (“Immigration – Part 1,” readability level 9.5), word length was much longer than the other passages (“Malcolm X,” 786 words), or word length was much shorter than the other passages (“Temperature and Humidity,” 291 words). Although both selected passages are labeled as “Part 2,” comprehension of these

passages is not dependent upon Part 1. Students were asked to read a total of two grade-level passages, one expository and one narrative. Both passages were either read aloud or silently (see Appendix B).

The time that it took to read each passage was recorded using a stopwatch. Miscues (i.e., reading errors) were recorded for passages that were read orally. After reading each passage, the examiner asked sixth-grade students 8 open-ended questions and seventh-grade students 10 open-ended questions to yield a Comprehension score. For sixth grade, four questions were explicit, assessing whether the student could understand and remember information stated directly by an author, and four were implicit, assessing the reader's ability to draw inferences (QRI-5; Leslie & Caldwell, 2011). For seventh grade, five questions were explicit and five were implicit. The QRI-5 manual reported strong inter-rater reliability of .98 for Comprehension scores. Regarding proportion of correct scores on sixth-grade Comprehension, narrative texts yielded a mean score of .68 ($SD = .17$), and expository texts yielded a mean score of .67 ($SD = .18$). Regarding proportion of correct scores on upper middle school Comprehension, narrative texts yielded a mean score of .84 ($SD = .17$) and expository texts yielded a mean score of .66 ($SD = .18$).

Procedure

Data collection took place over a three-week period in April and May, 2015. Policies and procedures dictated by The University of Memphis Institutional Review Board were strictly adhered to throughout the study. Passive parental consent forms were distributed to students in sixth- and seventh-grade regular education classrooms approximately one week prior to the study. Child assent was required for participation in the study. Across both grades, a total of 16 parents returned consent forms, indicating that they did not grant consent for their child to participate in the study. Of the sixth-grade participants, four declined assent, one was not

assessed due to excessive absenteeism, and one withdrew from school during the data collection. With regard to the seventh-grade participants, five did not assent, one withdrew from the study half way through the individual testing session, and one was removed from the study because he could not speak English fluently.

Examiners were eight school psychology graduate students trained in psychoeducational assessment. Prior to the study, all of the examiners were trained in the assessment procedures. The TOSCRF-2 was group-administered first, and the two grade-level QRI-5 passages were read either orally or silently (one narrative and the other expository) during the second day of test administration. All of the individual testing sessions were audio recorded. Using these recordings, 20% of the participants were randomly selected (Research Randomizer; Urbaniak & Plous, 2014) and scored by a blind reviewer to ensure inter-rater agreement. This blind review revealed some systemic errors in the scoring of oral reading miscues (i.e., some assessors did not count omitted headings or words as errors), resulting in a subsequent review of 100% of the passages read aloud to ensure the accuracy of the miscue data. Overall, discrepancies in scoring were rare and were resolved through discussion between the first author and blind reviewer. Inter-rater reliability for reading comprehension questions across both grades was high, with less than 1% discrepancies in reading comprehension scores. No discrepancies were found with regards to reading time; a one point discrepancy was found for a handful of TOSCRF-2 protocols (i.e., < 5%).

A mixed between-within subjects design was used in this study. Reading modality (passages read orally versus silently) served as the between-subjects independent variable, passage genre (narrative versus expository text) served as the within-subjects independent variable, and reading comprehension (number of questions answered correctly after reading the

QRI-5 passages orally or silently) served as the dependent variable. Students were randomly assigned to the oral versus silent reading condition. Index scores from the TOSCRF-2, the measure of general reading skill, were available for use as a covariate. The administration order of the two QRI-5 passages was fully counterbalanced with regard to reading modality and text genre. The QRI-5 passages and comprehension questions were individually administered in the school library during school hours. Group assessments were administered within sixth- and seventh-grade classrooms. All recruited students received a small memento as a token of thanks (i.e., sticker, pencil, eraser), whether they participated or declined to participate in the study.

Results

Data Processing and Screening

Data for all dependent and independent variables used in the analyses were screened for missing data points, outliers, normality, homogeneity of variance, independence of the covariate and treatment effects, homogeneity of regression slopes, and linearity. Two outliers were identified in the data set (i.e., z -scores < 3.29 ; Tabachnik & Fidell, 2013) from one sixth grader and one seventh grader. These students had implausible (i.e., very fast) silent reading times in conjunction with very low reading comprehension scores (i.e., 3 or fewer narrative questions answered correctly, 1 or fewer expository questions answered correctly), likely indicating that these two students did not actually read the passages. Subsequently, the reading time and comprehension data for all participants who were assigned to the silent reading condition were carefully screened for “fake” reading behavior using the criteria described above. Because the two aforementioned cases had extremely fast silent reading times (i.e., < 45 seconds) and very low reading comprehension scores, it was determined that the participants were likely “fake” readers, and therefore, were dropped from the analyses. No other instances of suspected “fake” reading were found. Skewness and kurtosis statistics fell within acceptable limits (i.e., < 2.0 ;

Tabachnick & Fidell, 2013) and Levene's test for homogeneity of variance was not statistically significant. One participant was missing data related to the expository passage due to an administrator error. The SPSS (version 23) estimation maximization algorithm was used to estimate the missing data for that one case. In sum, data were available for 86 sixth graders and 87 seventh graders for use in the analyses ($N = 173$).

A one-way analysis of variance (ANOVA) was used to check for administration order effects on reading comprehension following oral or silent reading for both grades. For the sixth-grade sample, no statistically significant effects were detected regarding administration order for narrative passages $F(1, 85) = 1.08, p = .30, \eta^2 = .01$, or expository passages, $F(1, 85) = .83, p = .36, \eta^2 = .01$. Similarly, for the seventh-grade sample, no statistically significant effects were detected for administration order for narrative passages, $F(1, 84) = 1.31, p = .26, \eta^2 = .02$, or expository passages, $F(1, 84) = .06, p = .82, \eta^2 = .001$. Further, the sixth-grade students randomly assigned to the oral ($M = 91.89, SD = 11.03$) and silent ($M = 90.47, SD = 11.06$) reading conditions were not found to differ in terms of their general reading skill, as measured by the TOSCRF-2, $t(85) = .60, p = .84$. Similarly, seventh-grade students who were randomly assigned to the oral ($M = 94.26, SD = 11.69$) and silent reading conditions ($M = 92.23, SD = 8.89$) were not found to differ in terms of their general reading skill, as measured by the TOSCRF-2, $t(84) = .90, p = .09$.

Analysis of covariance requires several assumptions beyond that of analysis of variance, including the assumption that a linear relation exists between the covariate and the dependent variable and homogeneity of regression slopes. A visual analysis of the bivariate scatterplots for both grades revealed a non-linear relation between the dependent variables (i.e., QRI-5 comprehension questions from the expository and narrative texts) and the covariate (i.e., the

TOSCRF-2 scores). When the assumption of linearity is violated, the statistical power of the test is reduced, error terms are not reduced as completely as they might be, the most favorable matching of groups is not achieved, and group means are adjusted incompletely (Tabachnick & Fidell, 2013). Heterogeneity of regression slopes occurs when there is an interaction between the independent variable(s) and covariate(s) (Tabachnick & Fidell, 2013). In other words, the relationship between the covariate and dependent variable varies across different levels of the independent variable, making the covariate adjustment across cells different (Tabachnick & Fidell, 2013). A significant modality by reading ability interaction was observed on the sixth-grade narrative passages, $F(2, 84) = 6.49, p = .002, \eta^2 = .13$, and expository passages, $F(2, 84) = 3.82, p = .03, \eta^2 = .08$, suggesting that the assumption of homogeneity of regression slopes was violated. Although the assumption was not violated for the TOSCRF-2 with seventh-grade narrative passages, $F(2, 83) = 1.90, p = .16, \eta^2 = .04$, results approached statistical significance for expository passages, $F(2, 83) = 3.01, p = .055, \eta^2 = .08$. Because these assumptions required for ANCOVA were violated, the TOSCRF-2 was not used as a covariate in subsequent analyses.

Descriptive Statistics

Although the TOSCRF-2 was eliminated as a covariate, this measure still proved valuable in shedding some light on the general reading skill level of the sixth- and seventh-grade participants. The average performance on the TOSCRF-2 fell within the lower end of the average range for the sixth-grade ($M = 91.18, SD = 11.00$) and seventh-grade students ($M = 93.24, SD = 10.38$), indicating that many of the students participating in this study may be considered at-risk in terms of their overall reading skill. For passages read aloud, the number of words that were read correctly per minute (WCPM) were calculated across narrative and expository passages. No differences were found in WCPM across the narrative passages ($M =$

145.86, $SD = 53.79$) and expository passages ($M = 149.84$, $SD = 53.27$) for the sixth-grade students, $t(86) = -1.47$, $p = .14$, $d = -0.07$. Somewhat surprisingly, on average, seventh-grade students read 14 more words correct per minute when they read expository passages ($M = 134.78$, $SD = 27.59$) versus narrative passages ($M = 120.78$, $SD = 24.06$), $t(40) = -9.09$, $p < .001$, $d = 0.54$. For passages that were read silently, words per minute (i.e., reading rate) were calculated across both passage genres for each grade. Similar trends across grades were found regarding words per minute (WPM) for narrative and expository passages that were read silently. The sixth-grade students read narrative ($M = 176.28$, $SD = 57.89$) and expository text ($M = 181.29$, $SD = 56.11$) at comparable rates, $t(42) = -.95$, $p = .35$, $d = -0.08$. However, on average, the seventh-grade students read the expository passage more quickly ($M = 186.89$, $SD = 61.72$) than the narrative passage ($M = 164.62$, $SD = 49.81$), $t(42) = -3.79$, $p = .00$, $d = 0.39$.

Analyses of Variance

For each grade, a 2 (reading genre) X 2 (reading modality) mixed factorial ANOVA was conducted to determine if these variables influenced reading comprehension (see Table 1).

Table 1

Reading Comprehension Scores across Reading Modality and Text Genre

	Narrative		Expository	
<i>Sixth-Grade (N = 87)</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Oral ($n = 44$)	4.43	1.86	3.52	1.98
Silent ($n = 43$)	3.47	1.72	3.14	1.77
	Narrative		Expository	
<i>Seventh-Grade (N = 86)</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Oral ($n = 43$)	4.51	2.16	3.23	1.77
Silent ($n = 43$)	3.86	2.34	2.91	1.90

Note. Students answered 8 questions on the sixth-grade passages and 10 questions on the seventh-grade passages.

For the sixth-grade students, a statistically significant main effect was observed on reading comprehension for reading genre, $F(1, 85) = 10.17, p = .002, \eta^2 = .11$, while reading modality approached statistical significance, $F(1, 85) = 3.87, p = .05, \eta^2 = .04$. On average, sixth-grade students correctly answered 49.4% or 3.95 ($SD = 1.85$) questions (out of 8) after reading the narrative passage and 41.6% or 3.33 ($SD = 1.88$) questions after reading the expository passage. Regarding reading modality, on average, sixth-grade students correctly answered 49.8% or 3.98 ($SD = 1.92$) questions correctly (out of 8) after oral reading and 41.6% or 3.33 ($SD = 1.75$) questions (out of 8) after silent reading. No statistically significant interaction effect was found between reading genre and reading modality, $F(1, 85) = 2.27, p = .14, \eta^2 = .03$.

Consistent with the findings of the sixth-grade sample, a statistically significant main effect for reading genre on reading comprehension was observed for the seventh-grade sample, $F(1, 84) = 22.25, p < .001, \eta^2 = .21$. On average, seventh-grade students correctly answered 41.9% or 4.19 ($SD = 2.26$) questions (out of 10) after reading the narrative passages and 30.7% or 3.07 ($SD = 1.83$) questions (out of 10) after reading the expository passage. However, the main effect for reading modality on reading comprehension was not statistically significant, $F(1, 84) = 1.69, p = .19, \eta^2 = .02$. On average, seventh-grade students correctly answered 38.7% or 3.87 ($SD = 1.97$) questions correctly (out of 10) after oral reading and 33.8% or 3.38 ($SD = 2.12$) questions after silent reading. Again, a statistically significant interaction effect was not found between reading genre and reading modality for the seventh-grade sample, $F(1, 84) = .47, p = .49, \eta^2 = .006$ (see Table 1).

Discussion

As students transition from elementary to middle school, curricular expectations increase dramatically (Misulis, 2009), requiring students to be proficient silent readers who can derive meaning from both narrative and expository texts. The purpose of the present study was to examine the effects of reading modality and passage genre on the reading comprehension of a sample of sixth- and seventh-grade students. Reading modality was not found to influence comprehension for the seventh-grade sample, but modality approached statistical significance for the sixth-grade sample. These results suggest that by the time these students reached the end of the sixth grade, they successfully transitioned as a group to being efficient silent readers (i.e., equivalent comprehension following oral and silent reading). With regard to text genre, students in both grades answered fewer comprehension questions correctly after reading expository versus narrative passages, regardless of whether the text was read aloud or silently. It is notable that across both grade levels and text genres, students' average reading comprehension was poor (i.e., at frustration level).

Reading Modality

The body of literature investigating the influence of reading modality on reading comprehension in middle school students is rather scarce. Excluding studies that collapsed data across a range of grades, a review of the literature yielded only three other studies examining this topic with students beyond the fourth grade (i.e., Dickens & Meisinger, 2015; Hale et al., 2007; Prior et al., 2011). The effect of modality on reading comprehension approached statistical significance for sixth-grade students in the current study ($p = .052$, $\eta^2 = .04$), which is similar to the findings of the sixth-grade students in Dickens and Meisinger (2015) ($p = .04$, $\eta^2 = .08$). These findings suggest that by the end of the sixth grade, students have likely transitioned to silent reading as their primary reading mode. On average, seventh-grade students in this study

demonstrated equivalent levels of comprehension across both modalities, indicating that they had successfully transitioned to being proficient silent readers. Prior et al. (2011) found that elementary school students (grades 1-5) demonstrated better reading comprehension following oral as opposed to silent reading; sixth-grade students read with comparable comprehension across both modalities; and seventh-grade students demonstrated better comprehension of text that was read silently. The reading modality trends for the sixth- and seventh-grade students in the Prior et al. (2011) study are consistent with findings from the current study. Lastly, results from the present study are inconsistent with that of Hale et al. (2007), who found that oral reading bolstered comprehension even with high school students (grades 11-12).

Patterns across these studies suggest that readers transition to efficient silent reading sometime during middle school, although the exact grade at which equivalent comprehension across modalities is observed varied across studies. These differences could be attributed to the characteristics of the samples used. In particular, the average reading skill level of the samples varied considerably. For example, the sixth-grade students in the Prior et al. (2011) study scored approximately seven points higher ($M = 98.28$, $SD = 9.57$) than sixth-grade students in the current study ($M = 91.18$, $SD = 11.00$) on standardized measures of general reading ability. Further, students in the current study were from predominantly low socioeconomic status families ($\approx 59\%$ free or reduced cost lunch), whereas those who participated in Prior et al.'s (2011) study may have been from more affluent families (79% of parents had some form of post-secondary education). Students in the Hale et al. (2007) study also consisted of relatively low skilled readers from predominately lower socioeconomic status homes (i.e., 57% of elementary and 63% of high school students qualified to receive free or reduced lunch), providing a potential explanation for those outlier results regarding high school students. Additional research is

needed to elucidate the potential influence of individual-level factors, such as skill level, on the timing of the transition from efficient oral to silent reading.

Results from this nascent literature suggest that the transition to effective silent reading occurs during students' middle school years. However, Chall's stages of reading development model (1983, 1996) suggested that by approximately fourth grade, students should be able to use their proficient reading skills to learn content area knowledge. The primary grades focus on teaching students how to read, but once they have become proficient, fluent readers, they are able to use these skills to gain content area knowledge from text. Chall called this stage of reading "reading for learning the new," which corresponds to a shift in the curriculum to greater levels of expository text (Kuhn & Stahl, 2003). The emerging literature on silent reading suggests that the transition to efficient silent reading occurs much later than is generally assumed; probably occurring after students have transitioned into middle school. One might conclude that curricular expectations are not in line with typical development, and that students may require additional pedagogical support to meet these standards.

Text Genre

Results from the current study revealed that students in both grades answered fewer comprehension questions correctly after reading expository versus narrative passages, whether the text was read aloud or silently. Most studies that have examined the effects of text genre on reading comprehension have not considered reading modality as a variable of interest, and most have consisted of participants who were in the third and fourth grades (i.e., Best et al., 2008; Cervetti et al., 2009; Kucer, 2011). One study used a sample of high school students diagnosed with learning disabilities (Sáenz & Fuchs, 2002), and one study used a sample of children who ranged in age from 10 to 14 (Eason et al., 2012). In sum, like the body of literature investigating

the influence of reading modality on comprehension, studies investigating the influence of text genre on reading comprehension in middle school students is rather exiguous.

Inconsistent with findings from the current study, two studies found that reading accuracy across both narrative and expository passages was comparable (Cervetti et al., 2009; Eason et al., 2012;). However, Eason et al. (2012) indicated that this finding could have been attributed to methodological issues (i.e., the expository texts were highly cohesive, which may have compensated for the less-familiar topics). Further, age-related trends could not be observed because the authors collapsed the data across age groups. In addition to finding comparable results in their fourth-grade sample in terms of reading accuracy across both genres, Cervetti et al. (2009) also found that participants answered more comprehension questions correctly after reading informational text, which is a surprising finding. The authors hypothesized that perhaps a genre effect was found because power was compromised due to the study's small sample size ($N = 74$).

Sáenz and Fuchs (2002) found that high school students diagnosed with learning disabilities had more difficulty with expository text than with narrative text in terms of reading fluency and comprehension, which is consistent with findings from the current study. Similarly, Best et al. (2008) found that third-grade students comprehended narrative text better than expository text. Although the results from the present study were generally consistent with the extant literature in terms of the influence of text genre on reading comprehension, some disparate findings are also worth noting. The sixth-grade students demonstrated equivalent reading speed (and accuracy, when reading aloud) across both modalities and passage genres. However, the seventh-grade students read the expository passage faster when reading silently (i.e., words read per minute) and read faster and more accurately when reading aloud (i.e., words correct per

minute) as compared to the narrative passages. This finding was unexpected, given that the expository passages were more difficult for students to comprehend across both grade levels. Although the QRI-5 reported comparable readability levels for the narrative and expository passages used in this study (7.8 & 7.5, respectively), the readability formulas used to generate those values could only provide a rough estimate of the text's difficulty level (Benjamin, 2012). It is possible that the seventh-grade narrative passage was more challenging for students to read, but not to comprehend.

According to the criteria used by the QRI-5 (Leslie & Caldwell, 2011), students reading text at an independent level should be able to answer 90% of the comprehension questions correctly, students reading at an instructional level should answer 70% of the questions correctly, and those at a frustration level should answer less than 70% of the questions correctly. On average, 71.0% of sixth graders in the present study fell at the frustration level, 19.3% fell at the instructional level, and 9.7% fell at the independent level after answering comprehension questions. The seventh-grade participants performed worse than their sixth-grade counterparts on reading comprehension tasks, with 88.1% of seventh graders falling at the frustration level, 10.8% at the instructional level, and only 1.1% at the independent level after answering comprehension questions. These findings are consistent with other statistics drawn from larger, national studies. According to Reardon, Valentino, and Shores (2012), only about one third of middle school students in the United States possess the competencies that are necessary to read in a deeper, more comprehensive manner, and despite many years of concerted efforts to improve reading instruction, most students' reading comprehension scores remain low (Hirsch, 2003). These results suggest that students' struggle with understanding text are not limited to expository text, although results from the current study demonstrated that difficulties were most

prominent with that text genre.

One of the most critical reading requirements stated in the Common Core State Standards (CCSS) is that all students must be able to understand texts of increasing complexity as they advance through school (National Governors Association Center for Best Practices [NGA Center] & Council of Chief State School Officers [CCSSO], 2010). The CCSS even makes specific recommendations to help nurture this growth trajectory (e.g., fourth graders should spend 50% of their time reading expository or informational text) (NGA Center & CCSSO, 2010). Moss, Leone, and Dipillo (1997) report that without providing specific instruction in extracting meaningful information from expository texts, educators cannot assume that children will transfer their ability to read narrative text into competent reading of informational text as they advance through school (Moss et al., 1997). Results from the current study suggest that middle school students may not possess the reading skills necessary to fully comprehend expository text. If curricular expectations require students to read denser, more informational text by the time that they reach middle school, then intensive reading comprehension instruction, especially in terms of expository text, should begin far before then.

The ability to independently read expository text is critical for college and career readiness, which is the aim of most educational programs. However, evidence suggests that current standards, curriculum, and instructional practices are not doing enough to cultivate successful expository reading comprehension (NGA Center & CCSSO, 2010). As little as 7% of elementary school and 15% of middle school instructional reading is expository (Hoffman, Sabo, Bliss, & Hoy, 1994; Moss & Newton, 2002; Yopp & Yopp, 2006), and the nominal expository reading in which students engage often involves skimming and scanning for particular, discrete pieces of information, which is unlikely to prepare students to truly understand complex text

(NGA Center & CCSSO, 2010). Research examining literacy practices in early elementary school provides further support for the scarcity of expository texts during initial reading instruction. Duke (2000) analyzed 20 first-grade classrooms, finding a dearth of informational text in classrooms and a mean of only 3.6 minutes per day using informational text in written language activities. Even less time (i.e., 1.4 minutes per day) was spent using informational text in school districts of low socioeconomic status (Duke, 2000).

One would expect that expository text would become more bountiful in classrooms as students advance through school; however, Braker-Walters (2014) described contrary findings in a quantitative content analysis study of the text genres contained in three commercially published fourth-grade basal reading texts. Not surprisingly, findings indicated that the percentage of informational text found in the three basal readers did not meet the informational text standard set by the Common Core State Standards for English and Language Arts (CCSS-ELA). The informational text recommendations found in the CCSS-ELA require teachers to integrate significant amounts of informational text instruction into the reading curriculum. Because most elementary classrooms rely on basal texts for teaching reading and language arts, it is important for educators to be aware of the amount and type of informational texts that appear in basal texts at each grade level. Not only should sufficient informational text be provided to students, but prior to entering middle school, it is critical that students receive appropriate pedagogical support that will allow them to be independent silent readers who are able to construct meaning from both narrative and expository texts.

Limitations and Future Directions

The present study had several limitations and future directions that warrant discussion. First is the issue of generalizability of this study's results to other samples of students with

different demographic characteristics. Based on their performance on the TOSCRF-2, participants from the current study could be considered at-risk in terms of their overall reading ability. The variability of the TOSCRF-2 scores was also attenuated, suggesting that the normal range of skill was not represented in this sample. Further, approximately 59% of the participating school's students qualify for free or reduced lunch, indicating that most of the participants were from low socio-economic status (SES) homes. Differences exist in reading skill among students from different socioeconomic groups, primarily because those classified as low SES often have less exposure to vocabulary and less developed background knowledge (Beck & McKeown, 2007; Chall & Jacobs, 2003), which are variables that contribute to successful reading comprehension. It would behoove future researchers to not only recruit participants from diverse SES backgrounds, but to also secure a sample whose general reading ability more closely approximates average or typical skill for their respective grade.

A single passage per genre was selected for each grade level due to the inherent variability in difficulty levels across texts (Francis et al., 2008) and also to guard against fatigue effects. Future studies could use multiple passages for each genre to enhance the generalizability of results to new texts. Given the sparseness of the literature on reading modality in particular, these findings should be replicated with different instruments and different samples.

Additionally, longitudinal research should be conducted to examine individual level factors that predict the timing of the shift from oral to silent reading.

Another limitation pertained to the measure of general reading skill used in this study, the TOSCRF-2. This measure was initially selected to be used as a covariate in order to control for reading skill; however, during the data screening process, the TOSCRF-2 demonstrated a non-linear relationship with the reading comprehension dependent variable, did not correlate

significantly with all of the reading comprehension variables, and violated the assumption of homogeneity of regression slopes. These problems were remediated by eliminating the covariate from the analyses. Future researchers could investigate reading skill level using a more appropriate measure of general reading skill.

Conclusion

As students enter middle school, they are expected to gain content area knowledge by silently reading expository text in an independent manner. Consistent with the larger literature, results of the present study suggest that students may not receive enough explicit instruction in how to derive meaningful information from expository text prior to entering middle school. As students in late elementary school are exposed to and required to read more expository texts, an opportunity exists for educators to provide strategic pedagogical support in terms of how to read and understand expository material. Finally, although there is an expectation for students to transition to read silently around the fourth grade, results from the current study indicate that students have not transitioned to being independent silent readers until middle school. Just as students should be taught explicitly how to derive meaning from expository texts, programs focusing on how to read silently with meaning, such as scaffolded silent reading instruction (Denton et al., 2011; Reutzel, Jones, Fawson, & Smith, 2008; Sanacore, 2002), are needed to build the necessary skills to successfully navigate the middle school curriculum and beyond.

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Appendices

Appendix A

Y	N	N/A	Integrity Checklist: TOSCRF-2
			1. Before administration, printed the two examples shown on the front page of the Student Record Form on a dry erase board/chalkboard.
			2. Distributed the Student Record Forms with the cover page facing up.
			3. Read group administration instructions (p. 3) verbatim.
			4. Pointed to example 1 on an extra Student Record Form and referred to example rows printed on board.
			5. Followed verbatim instructions in administration booklet for sample items (p. 3).
			6. After saying "Begin," began timing.
			7. After exactly 1 minute, said "Stop."
			8. When you were sure that students understood how to take the test, followed verbatim instructions for group administration (p.4).
			9. After saying "Begin," began timing.
			10. After exactly 3 minutes, said "Stop."
			11. Scored and summed items correctly.
Comments:			

Appendix B

Oral Reading Instructions

I am going to give you a reading passage. When I say begin, I want you to read the passage **out loud** as carefully and as quickly as you can. If you come to a word that you don't know, do your best and keep going.

When you have finished reading, I will take up the passage and ask you some questions about what you just read. I cannot give you any hints or help. Do your best to answer each question correctly. Do you have any questions? Ok, here is the passage (*examiner places the passage in front of the student*). Remember to read the passage **out loud**. The title of the passage is _____. Begin reading here (*examiner points to the first word of the passage*).

Silent Reading Instructions

I am going to give you a reading passage. When I say begin, I want you to read the passage **silently** or "**in your head**" as carefully and as quickly as you can. If you come to a word that you don't know, do your best and keep going. Only read the passage through once.

When you have finished reading the passage, look up at me, and say, "**Done.**" I will take up the passage and ask you some questions about what you just read. I cannot give you any hints or help. Do your best to answer each question correctly. Do you have any questions? Ok, here is the passage (*examiner places the passage in front of the student*). Remember to read the passage **silently**. The title of the passage is _____. Begin reading here (*examiner points to the first word of the passage*).

If the child begins reading orally, provide prompt, "Remember to read in your head."