Assessing Narrative and Expository Reading Passages by Text and Online Presentation

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Abstract

This research used both expository and narrative text to analyze students' miscues and comprehension scores using both online reading passages and the traditional print version of the QRI-V. This was done as part of an education course for pre-service teachers. The students were fourth and fifth graders who came from a homeless shelter in the Bronx and were tested in order to plan appropriate tutoring programs. Comprehension was measured by accuracy of retelling a story that was just read, and answering explicit and implicit questions. Prior knowledge of the topic and number of miscues were also correlated. Comparisons were made between narrative and expository text, and presentation in print or online. Findings suggest that for fourth and fifth grade elementary students, comprehension of expository passages was more sensitive to miscues than narrative passages. In general, text presentation of material had a slightly stronger correlation with recall of information and answering implicit and explicit questions than on-line presentation. Classroom implications for enhancing comprehension and the infusion of technology are discussed. These included graphic organizers, prompts, context clues, word maps, digital storytelling, questioning scaffolds and anticipation guides.

Keywords: Narrative Expository Comprehension QRI

Introduction

The federal "No Child Left Behind Act" and standardized state assessments and curricula are based on a notion of literacy that does not reflect the reality of our time. Schools are accountable to report how well students read, but we are testing them on print media only (Barnwell, 2009). Traditional and conventional methods for assessing students' reading ability have always included individualized developmental reading assessments such as the Qualitative Reading Inventory (QRI), administered to students in paper format. The relevance of student performance on these assessments must be considered as today's students are possibly reading computer screens more than traditional books. In addition, does the type of text read, expository or narrative, affect the child's ability to decode or comprehend in the same way for different media: text or screen? The focus of this research is to ascertain whether student reading miscues and comprehension are affected depending on whether they read from paper text or computer screen. These are the new forms of information that young people consume and create regularly, therefore, assessment practice needs to shift from mainly text reading to also include screen reading. Reading assessment needs to consider the type of text being read, expository or narrative, and the medium they are using, print or screen. Therefore, it seems logical to assess student literacy reading based on each of these factors.

Method

Undergraduate education students who were enrolled in a special education assessment course were paired with fourth and fifth grade at risk students who were referred to the Manhattan College Reading Clinic by their teachers in the public school. All children lived in a local shelter in the Bronx.

There were thirty undergraduate students and thirty elementary students. These elementary students came to the Manhattan College campus by bus once a week for 15 weeks for an hour and fifteen minutes of tutoring by the undergraduate students who were juniors and seniors enrolled in the course. Sixteen of the elementary students were Black, eleven of the students were Hispanic, two of the students were White and one student was Asian American. Twenty of the undergraduate students were White, four were Black and six were Hispanic. Eight of the undergraduates were male and twenty two were female. Fifteen of the elementary students were male and fifteen were female.

The Qualitative Reading Inventory V was used for initial assessment in reading. This assessment consisted of isolated word lists to determine developmental grade level in reading, and appropriate related passages would give more information on comprehension ability. All elementary students were within the fourth and fifth grade reading levels. Comprehension was measured by passage retell scores and answering explicit and implicit questions that were scored from one to three each depending on correctness and completeness. Before the student read the passage, prior knowledge of the topic was also assessed by answering general topic questions also graded from one to three. Four types of passages were used: narrative (story-like), expository (non-fiction) and presentation of the passage was either in text format from the book, or on-line. Students read the passages in randomly assigned order consisting of narrative-text, narrative-on-line, expository-text, and expository-on-line conditions. Each student read four passages over the period of two sessions. The college students were trained and scored the passages read for elementary student prior knowledge of the topic, number of miscues in reading, ability to free retell information from the story, and ability to answer specific explicit (answer in text) and implicit (not in the text) comprehension questions. The results for each of these variables were collected individually for each passage that each student read.

There were three levels of analysis that were used to look at the collection of data. Summary statistics were reviewed for the entire populations of one hundred and twenty data samples (four passages for each of thirty students) to examine trends and distribution characteristics for the entire sample. A correlation matrix was generated for all one hundred and twenty data samples to see the relationship between the variables in the study and to identify pairings of strong and weak causality between the variables.

The data was then split into two categories, depending on if the reading passage was narrative or expository. A correlation matrix was generated for each set of sixty data samples to see the relationship between the variables in the study, and to identify pairings of strong and weak causality between the variables. The entire population was then split by the online/text characteristic and a correlation matrix was generated and analyzed for each of these data sets.

The final data split was into four categories, narrative-text, narrative-on-line, expository-text and expository-on-line. A correlation matrix was generated and analyzed for each of these data sets. The results are presented in Table 1 and discussed below.

Table 1

Correlations Between Prior Knowledge , Miscues, Retell, and Comprehension Scores

ALL DATA	PRIOR KNOWLEDGE	MISCUES	RETELL	IMPLICIT	EXPLICIT
MISCUES	-18%				
RETELL	40%	-15%			
IMPLICIT	15%	-34%	5%		
EXPLICIT	10%	-18%	3%	58%	
IMPLICIT & EXPLICIT	14%	-29%	4%	89%	88%
ONLINE	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-33%				
RETELL	31%	-14%			
IMPLICIT	32%	-32%	-5%		
EXPLICIT	39%	-6%	1%	64%	
IMPLICIT & EXPLICIT	39%	-23%	-3%	93%	88%
TEXT	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	7%				
RETELL	31%	-15%			
IMPLICIT	-8%	-36%	13%		
EXPLICIT	-41%	-29%	-7%	54%	
IMPLICIT & EXPLICIT	-29%	-36%	3%	87%	89%
NARRATIVE	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-12%				
RETELL	40%	-9%			
IMPLICIT	26%	-22%	7%		
EXPLICIT	7%	-11%	15%	41%	
IMPLICIT & EXPLICIT	18%	-19%	13%	80%	88%
EXPOSITORY	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-28%				
RETELL	47%	-28%			
IMPLICIT	5%	-49%	6%		
EXPLICIT	14%	-28%	-3%	72%	
IMPLICIT & EXPLICIT	10%	-43%	2%	95%	91%
TEXT EXPOSITORY	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-14%				
RETELL	43%	-32%			
IMPLICIT	-16%	-52%	6%		
EXPLICIT	-28%	-40%	-19%	72%	
IMPLICIT & EXPLICIT	-23%	-50%	-6%	94%	91%
ONLINE EXPOSITORY	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-39%				
RETELL	50%	-21%			
IMPLICIT	27%	-48%	20%		
EXPLICIT	56%	-17%	48%	72%	
IMPLICIT & EXPLICIT	42%	-37%	35%	95%	90%
TEXT NARRATIVE	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	20%				
RETELL	30%	6%			
IMPLICIT	-2%	-16%	33%		
EXPLICIT	-48%	-21%	2%	33%	
IMPLICIT & EXPLICIT	-37%	-24%	17%	71%	90%
ONLINE NARRATIVE	**PRIOR KNOWLEDGE**	**MISCUES**	**RETELL**	**IMPLICIT**	**EXPLICIT**
MISCUES	-31%				
RETELL	32%	-14%			
IMPLICIT	37%	-23%	-14%		
EXPLICIT	19%	4%	-2%	51%	
IMPLICIT & EXPLICIT	34%	-13%	-10%	90%	83%

Results

From the background philosophy and assumptions described in the QRI manual, one can make expectations with regard to data results. It would be expected that prior knowledge of a topic would be associated with fewer reading miscues and increased comprehension of the material read. Additionally, narrative passages should have fewer miscues and increased comprehension as well, since they are of a more familiar structure to young readers, having a beginning, middle and end to a story. Expository passages are more closely associated with nonfiction report writing that elementary school children typically have less exposure to. Data analysis from this study will be compared to these expectations. The QRI does not distinguish between text and on-line presentation of passages.

When examining the text vs. online data, as expected, the number of miscues was inversely correlated with explicit and implicit comprehension for both data sets. Therefore one can conclude that more errors in decoding would result in poorer comprehension of material. However the degree of correlation is much stronger for text (-35%) than for on-line passages (-8%). When the responses to explicit questions and implicit questions are combined, the correlations are -42% for text and -24% for on-line.

Prior knowledge shows some differences with regard to type of passage read and type of presentation. As expected, there was a strong negative correlation between prior knowledge and miscues by on-line presentation (-33%). However, the data showed a counterintuitive weak positive relationship between prior knowledge and miscues with text (7%). Prior knowledge showed an inverse relationship to miscues for both narrative passages (-12%) and expository passages (-28%), within the expected range of outcomes. When the data was broken down to a lower level, we see a negative correlation between prior knowledge and miscues for expository text (-14%), expository online (-39%) and narrative online (- 31%) passages, but a positive correlation for narrative text (20%). The correlational relationships between prior knowledge and miscues are stronger for online passages than for text passages, regardless of the type of passage, narrative or expository.

Prior knowledge and retell scores were highly correlated for both text (31%) and online (31%), and for narrative (40%) and expository (47%) as was expected. With further breakdown into expository text (43%), expository online (50%), narrative online (32%) and narrative text (30%) passages, all showed strong positive correlations as well.

Prior knowledge was strongly correlated to the ability to answer implicit questions from on-line passages (32%), but had almost no correlation with text passages (-8%). A similar, but more pronounced pattern emerges from the correlation of prior knowledge to explicit online questions (39%) and explicit text questions (-41%). These results show that prior knowledge of a topic affects on-line reading more than text reading. Prior knowledge was more strongly correlated to the ability to answer implicit questions from narrative passages (32%), but had almost no correlation with expository passages (5%). Explicit questions had a low correlation for both narrative passages (7%), and expository passages (14%). These results are consistent when the data was broken down to a lower level. The correlations between prior knowledge and explicit questions were for expository text (-28%), expository online (56%), narrative online (19%), and narrative text (-48%) passages. The correlations between prior knowledge and implicit questions were for expository text (-16%), expository online (27%), narrative online (37%), and narrative text (-2%) passages.

The number of miscues have mostly an across the board negative correlation with retell, implicit and explicit questions. This is consistent with the expected results that fewer reading miscues lead to higher comprehension. The effect for narrative was less than the effect for expository, and slightly less for online than it was for text. This may indicate that miscues alone may not have a strong affect on comprehension ability of fourth and fifth graders, but there may be other factors involved, such as prior knowledge or type of presentation. Also amount of miscues may have a lesser affect on comprehension of narrative passages than expository passages.

Another way to measure comprehension is through the ability to retell information after having read a passage. Retell ability was largely unrelated to answering explicit and implicit questions for both narrative and expository passages. Retell ability had a low correlation with prior knowledge of on-line passages, but a four time higher correlation with text passages. However, particularly for expository passages presented through text reading, greater retell ability was not completely associated with better comprehension, due to low correlation with implicit and explicit responding to questions.

This may be a result of the unstructured nature of free recall for the QRI retell section. This may suggest that fourth or fifth graders respond differently to structured questions rather than free recall of information.

Discussion

Miscues associations.

For all of the elementary students in this study, decoding errors, or miscues, were associated with lower comprehension scores as measured by free retell of information after reading the story and responding to explicit and implicit questions. This relationship was stronger for text reading than on-line reading. Also, the effect was stronger for expository reading than narrative reading. This may indicate that fourth and fifth graders may have more familiar comprehension strategies to use with narrative information than they do with expository information.

Classroom Implications.

Teachers can boost comprehension of expository passages by using prompts, graphic organizers, SQRW activities or multimedia. Teachers can structure the purpose for reading by using an essential question as a prompt for students to use as a big idea while reading the passage. Pictures and multimedia images can also be used as prompts for retelling. For example, pictures of important vocabulary words from the passage can jog student memories and act as prompts to guide their responses. Graphic organizers are helpful to visually organize written information to include main concepts, themes, character analysis, plot, etc. They can be written in chart, box or web format (Weinstein & Mayer, 1986). A unit organizer can even help students relate previously learned information with newly read information by creating a map of relationships and questions (Lenz, Marrs, Schumaker & Deshler, 1993). SQRW is a reading strategy to review and take notes on reading passages. First, the student surveys the passage (S), then formulates a question (Q), after which he reads for information (R), and then writes down the information (W) (Bos, C. & Vaughn, S., 2006). Digital storytelling is another scaffold for student retelling. Digital storytelling allows students to create visual representation of a story by accessing online graphics. Using a combination of computer generated images and text, students can retell a story in their own words using pictures they believe illustrate the concepts or events and characters in the passage. Students may also include video clips, music and multimedia to recount events.

Prior knowledge associations.

Research has shown that reading comprehension is enhanced when new learning is integrated with prior knowledge (Rumelhart, 1980). Cooper (1993) further differentiated between text-specific prior knowledge, which consists of how the writing is organized, and topic-specific knowledge relating to the information to be read, key concepts and vocabulary. In this study, prior knowledge also positively affected most comprehension scores. For narrative and expository text, and for on-line reading, the more prior knowledge of the topic that a student had, the more they were able to comprehend the material. Prior knowledge did not have an effect with miscues and text passages, however. Further analysis showed that prior knowledge had a positive impact on answering implicit questions when read on-line, but not in text passages. It may be that the reader had trouble thinking about Rumelhart's organization of writing or topic-specific knowledge from text print in order to answer questions that were not directly stated in the reading passage. It may have been easier for the students to "look back" on a screen than flip through text passages.

Fourth and fifth graders today may be more mentally interactive with material presented on-line. It was in the explicit questions area for both narrative and expository text that prior knowledge had less of an effect. It is possible that fourth and fifth grade students did not need to or were not sophisticated enough to use their background knowledge as a strategy to answer questions that were directly related to the passage just read (textually explicit). These findings support the importance of activating prior knowledge before reading a passage in order to improve comprehension (Langer, 1980). Paying attention to readers' schemata before reading helps integrate new information with what students already know about the topic. For example, this may have been the case with the fourth grade narrative text passage on Martin Luther King, which is a familiar theme throughout the elementary grades, thus establishing background or prior topic-specific knowledge. Student familiarity with this topic could have been the reason why narrative text was the only positive correlation found between amount of prior knowledge and number of miscues. The students may have expected some of the vocabulary in the passage, which may have led to less reliance on accuracy of decoding in reading the text.

Since their prior knowledge was activated before reading, connecting new material to old material may have led to better comprehension and retell scores (Pressley, 1999).

Classroom implications.

Teachers can combine prior knowledge of students with new content in a meaningful way by using vocabulary reviews from prior topics and pre-teaching of important new vocabulary words that are central to understanding the topic and main concepts. As Stahl (2005) states, "Vocabulary knowledge is knowledge; the knowledge of a word not only implies a definition, but also implies how that word fits into the world." Technology can provide an authentic context for important vocabulary words by helping students create relationships among new content area terms. Specifically, students can use technology to create graphic representation of a word map. A word map is a graphic organizer that helps students to think and visualize a new term. A word map can use three essential questions to define a word (Schwartz and Raphael, 1985): a) what is it? (category), b) what is it like? (properties), and c) what are some examples (illustrations). In the middle of the word map the teacher can put a picture of the term, along with words associated with it. Students can add antonyms, synonyms, definitions and supporting examples to represent the term. Smartboards can be used to display video of where the words fit into a specific context. Students can have a pictorial representation of a term and actually hear and see the examples to support the new vocabulary word. When more vocabulary is understood, better retell and comprehension should result. Additionally teachers should differentiate their instruction to use different types of questions that tap into multiple intelligences, or different ways for students to show what they know. Student response often depends on how the question is asked.

Besides pulling out explicit information, teachers should encourage their students to use higher order thinking activities. The QAR (Question-Answer-Relationship Strategy) is an excellent way to teach readers that the process of reading requires thinking. Readers have to think about where to find answers to questions and to combine what they have read with their background knowledge (Raphael, 1986). For example, the QARS uses three categories to think about reading content in order to respond to a question: 'right there', 'think and search' and 'on my own'. Raphael (2006) further modified this strategy to include information a) "in the passage", b) "author and me", or c) "in my head". A matrix can be created to help students think about their manipulation of information. This has already been successfully used with fourth graders (Stein, 2009). A framework for students is provided below:

A) In The Passage

Right There	Think And Search
The answer is in the text; words used to make up the question are similar to the words in the passage. (textually explicit)	The answer is somewhere in the passage but you need to put different parts together. Words used in the question will differ from those in the answer. (textually implicit)

B) In My Head

Text Plus What I Know	On My Own
Answer is in the passage but you also need to think about what you already know and how it fits to what is in the passage. (think and fit text)	Answer is not in the passage and you need to use your own experience or past reading. (think and relate text)

C) Author and Me

The reader needs to think about what he or she already knows and combine that information with what is in the text to make an inference.

Retell associations

The ability of fourth and fifth graders to retell information that was just read did not seem to be related to either narrative or expository passages or the ability to answer explicit or implicit questions. However, retell ability was highly correlated with prior knowledge and text passages, but not with prior knowledge and on-line passages. It may be that fourth and fifth graders need structured questions in order to enhance their recall of information, particularly from on-line presentation, as they do not seem to tap into their prior knowledge spontaneously.

Classroom Implications.

Based on these points, teachers can build and activate prior knowledge by using a variety of strategies before, during and after reading a passage to increase student comprehension. "Before" reading strategies include the use of an Anticipation Guide, (Tierney, Readence & Dishner, 1995) that uses prediction to make a connection with comprehension, and set a purpose for reading. This is useful with both narrative and expository text. The teacher creates four to six statements that require the students to answer true or false. Statements should be open-ended and literal questions should be avoided. As students read the passage, they are confirming or refuting responses to questions. After the reading comprehension can be assessed by rich discussion about the topic as well as referring to student ability to confirm or refute their responses. Following is an Anticipation Guide example:

The Gray Whale
True False
1. The Gray Whale has a dorsal fin.
2. The Gray Whale is a baleen whale.
3. The Gray Whale is a victim of over-hunting and is almost extinct.
4. The Gray Whale can travel at a speed of ten to fifteen miles per hour.

Students would also enjoy a "Think / Pair / Share" discussion of their answers.

Another strategy for teachers to improve retell of information from reading is to teach the students to use context clues. Students should be encouraged to read on when they find an unfamiliar word and try to make sense by using semantic (root word or comparison to other words in the sentence) clues and syntactic (placement in the sentence) cues. It will be helpful for them to identify parts of speech, to try and guess, or to substitute a familiar word for one they don't know. Teachers can model this strategy through the use of "think alouds" during reading lessons. For example, in the sentence, 'The butterfly was hovering among the flowers', the teacher can demonstrate context clues to determine the meaning of "hovering". For semantic context the student can identify the root word "hover" and guess what that may mean. Did the student ever hear the word "hover" before? When? Does a plane or helicopter "hover"? What might that mean? For syntactic cues, when one examines the sentence structurally, it is clear that "hovering" is the action word or verb. What can a bee do among the flowers? Students can guess. Can the bee be eating or flying? In this way students enjoy being word detectives and making conscious connections may help their retell ability.

Conclusion

This research attempts to highlight the changes in the way children are becoming literate and interacting with different types of text and presentation. For fourth and fifth grade elementary students, comprehension of expository passages is more sensitive to miscues than narrative passages, when comprehension is measured by recall of information and responding to explicit and implicit questions. In general, text presentation of material has a slightly stronger correlation with recall of information and answering implicit and explicit questions than on-line presentation. However, when prior knowledge of the students is taken into account, comprehension of text as evidenced by answering explicit and implicit questions is weaker with printed text than on-line presentation. This supports research that identifies the importance of prior knowledge of students when reading (Goldman & Rakestraw, 2000). Students today are more proficient and focused on reading expository text, and students enhance their understanding at many levels of comprehension by using technology and reading from screens. These findings can revolutionize the manner in which teachers assess and interpret reading scores and the types of reading passages used to measure reading proficiency. If teachers are to accurately measure students' reading levels in the new media age, alternative tools to the traditional textbook QRIs must be used to authentically gauge literacy development and make instruction more relevant for computer savvy students today.

In discussing the direction that reading research in comprehension is likely to take over the next two decades, the Rand Reading Study Group (2002) has stated that "we live in a society that is experiencing an explosion of alternative texts."

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