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What Can Standardized Reading Tests Tell Us? Question-answer Relationships and Students' Performance

This study examined the comprehension subsection of Nelson-Denny Reading Test Form G (Brown, Fishco, & Hanna, 1993a) and some urban developmental students' performance on it. Three types of question-answer relations were identified using Pearson and Johnson's taxonomy. Students' performance was expressed in their scores on the three types of question-answer relationships so that comparison of their performance on the three types of questions could be analyzed. The largest portion of textually explicit (TE) questions reflected a stress on such basic reading skills as perceptual match and recall of details explicitly cued in the language of the text. Textually implicit (TI) questions and scriptally implicit (SI) questions are equally divided, which measure meaning construction and prior knowledge. The students scored highest on TE questions and considerably lower on TI and SI questions, indicating a general strength in locating explicitly cued text information and a common weakness in sense making and prior knowledge. Further analysis of each type of question yielded detailed information of some instructional value. The students' performance on TE questions indicated the effect of cued text expressed in different sentence structures and located in different positions relative to answers. Their performance on TI questions suggested limited vocabulary and inefficiency in understanding the author's message differently phrased. The students' performance on SI questions showed inability to read critically and a narrow knowledge base. The findings have instructional implications: these developmental students need explicit instruction in reading strategies, a broader knowledge base, and more sophisticated analytical skills.

Just as making inquiries is the crucial step humans undertake to understand themselves and the surrounding world, so asking questions is an essential technique readers use to make sense of what they are reading. Indeed, questions are designed to facilitate reading instruction and to measure reading ability. Although questions are widely used in the classroom and testing, their effect on facilitating and revealing students' comprehension of the text varies.

To better understand the effect of questions on assessing students' comprehension, Pearson and Johnson (1978) examined question-answer relations and developed a taxonomy of three types of questions, categorizing three question-answer relations as textually explicit (TE), textually implicit (TI), and scriptally implicit (SI). Answers to TE questions are right on the page. The question-answer relation is explicitly cued by the language of the text, allowing a quick track of the answer. Answers to TI questions are in the text rather than on the page, more implied than stated. The question-answer relation is linguistically and logically connected, requiring effortful search for meaning implied in a string of words similar in meaning. Answers to SI questions emerge from the interaction between the text information and the reader's prior knowledge. The question-answer relation is revealed in the process of the interaction. As a result, not only is the possession of required prior knowledge crucial in finding the answer but also the reader must have the ability to call upon that knowledge when it is needed. Clearly, the cognitive process involved in each of the three types of questions is qualitatively distinctive. TE questions direct the reader to match the text verbatim; TI questions require the reader to make sense of the text language; and SI questions demand the reader to integrate what is stored in the head with what is presented in the text.

The taxonomy of question-answer relations provided a new lens for the reading research on comprehension, instruction, and standardized testing. Examining the contribution of several variables to reading comprehension, Davey (1988) found that the question-answer relationship helped to differentiate readers of different reading abilities. Students receiving instruction on question-answer relations improved their ability to answer individual questions and their global comprehension performance (Benito, Foley, Lewis, & Prescott, 1993; Raphael & Pearson, 1985; Wells & Larson, 1987). Recently, Raphael and Au (2005) showed the instructional effect of question-answer relationships on enhancing comprehension and test-taking strategies across grade levels and content areas. Peters and Wixson (1989) evaluated the newly developed

state reading tests and concluded that those tests were an improvement over previous ones because they added scriptally implicit questions designed to measure readers' ability to go beyond information given. Interested in the cognitive process involved in dealing with the three types of questions, Tal and his colleagues (Tal, Siegel, & Maraun, 1994) looked into students' ability to locate explicit details, generate a local and global inference, and draw on prior knowledge. Grouping the readers according to their reading ability, they found that the ability groups differed in their performance on specific question-answer relations, revealing a connection between question types and cognitive capacity. Their finding, consistent with that of Davey, suggests that the allocation of questions types can affect readers' overall reading performance due to the different levels of cognitive process involved in them. In other words, students' performance is the function of students' reading ability and of the percentage of question types.

The demonstrated relationship between question types and students' performance raised a concern about accurate interpretation of standardized test results. This concern turned out to be not unfounded. In their analysis of the distribution of the three types of questions across different tests, Crowell and her colleagues (Crowell, Au, & Blake, 1983) found that the percentage of lower and higher level reading skills measured in three question-answer relations varied considerably in all the six tests they were investigating. It is not hard to imagine that these standardized reading tests would draw conflicting conclusions about the same reader with regard to his/her reading ability. While all reading tests claim to measure reading comprehension, the meaning of the construct varies from test to test because of their affiliation with different reading theories. If different question types tap different cognitive processes, different allocation of these question types in a test will inevitably shape different pictures of students' reading ability. The scores may either over- or under-estimate students' actual reading ability depending on what it means to measure and what it actually measures. The distribution of question types will become more crucial when the test is used to group students or hold schools accountable for students' performance. Therefore, an intimate knowledge of question-answer relations represented in standardized tests will be helpful for teachers and administrators in reaching a more accurate conclusion about students' reading ability.

This study examined questions in the comprehension subsection of Nelson-Denny Reading Test Form G (Brown, Fishco, & Hanna, 1993a) and students' performance on them. Three types of question-answer relations were identified based upon Pearson and Johnson's taxonomy. Students' performance was measured in relation to question types rather

than to the test as a whole, which made this study distinct from many others. Instead of asking how many questions students answered right, this study investigated how many students on average answered a particular question type right. Another strength of this study, which was rarely found in previous studies, was the identification and analysis of subtype questions in each question type in an attempt to account for the demonstrated variance in students' performance on the same type of questions. It is hoped that this study will contribute to a better understanding of this reading test used in many post-secondary education settings. It is also hoped that this study will demonstrate the instructional value of standardized tests in general. The following research questions guided this study:

1. What comprehension skills are measured in the Nelson-Denny Reading Test?
2. What does the result reveal about the strengths and weaknesses of the students?

Method

Participants

Fifty-five reading developmental students at a Midwest community college took the comprehension subsection of Nelson-Denny Reading Test Form G (Brown et al., 1993a) for 40 minutes. The extended time of 20 minutes was meant to relieve the students of time pressure in the hope that the scores would reflect the students' performance under a normal condition. More than 80% of the students were African Americans and the majority were females. The Accuplacer administered to the students by the college indicated a score range between 61 and 76. Nelson-Denny Test showed an average of 9th grade level, ranging from sixth grade to twelfth grade. The students were taking a medium level reading course to prepare for the prerequisites of some college courses.

Material

The Nelson-Denny Reading Test was first developed in 1929 as a measure of reading ability as well as a guide for instruction. The test has been periodically revised until the latest Forms G and H were published in 1993. It is widely used in post-secondary institutions to measure the test takers' reading level and ability. The test consists of two subsections: vocabulary and reading comprehension. The comprehension section contains seven reading passages and a total of 38 questions, each with five answer choices. The questions are equally divided as literal and interpretive; the passages are drawn from the latest editions of textbooks on humanities, social sciences, and science that are widely used at high

school and college levels (Brown, Fishco, & Hanna, 1993b). The time limit for the comprehension section is 20 minutes.

Data Collection and Analysis

As a study that examined students' performance on the types of comprehension questions rather than on the comprehension subtest as a whole, data collection consisted of two distinctive sections. The first section, quantitative in nature, investigated how many students on average correctly answered particular types of questions. To collect such data, one point was assigned to each question correctly answered by one student. For instance, a question that scored 55 points indicated that all 55 students taking the test answered it correctly. Presumably, the higher a question scored the easier the question was for the students. Conversely, the lower a question scored the more difficult it was for them. Therefore, students' performance on a particular question revealed their collective strength or weakness on the question type to which the question belongs.

The second section, qualitative in nature, examined types of questions asked in the comprehension subtest. They were coded as textually explicit (TE), textually implicit (TI), and scriptally implicit (SI), based upon the definition and illustration of Pearson and Johnson (1978). Questions that tap vocabulary knowledge were coded as TI if the target word was provided with the contextual clue: they were regarded as a test of comprehension as well as of vocabulary because many educators view vocabulary growth as reciprocal to comprehension and largely as the result of comprehended reading (Nagy, 1985; Stanovich, 1986). If not, the vocabulary questions were treated as SI questions for the reason that answers are independent of the text.

As the coding process of TE questions continued, the wide range of scores for those questions suggested that textually explicitly cued questions did not seem equally explicitly cued to readers of varying comprehension capability. For instance, 31 students correctly answered one TE question while 53 students correctly answered another question, showing a considerable gap among TE questions. Apparently, further coding was necessary to identify factors that might have made explicit cues less explicit to some students. A close look at the location and syntax of cued text led to the hypothesis that the variance might have been the result of location of the cued text relative to the answer and the sentence structure of the cued text. The location of the cued text was coded as before and after relative to the answer within the same sentence:

> Before: At home, John was said to be … (question stem)
> At home, John was (cued text) a bully (answer) with his siblings, …

After: What kind of acid is a by-product of electric power plants?
(question stem)

In other words, sulfuric acid (answer) can be made as a by-product of electric power plants. (cued text)

The syntactic structure was classified as simple, compound, and complex, the three principal English sentence structures formally introduced in schools. Finally, observation of variance in simple sentences resulted in two categories: basic and embedded structures. The embedded structure differs from the basic in that it contains such modifiers as participle, infinitive, and appositive:

He lived abroad for many years, acquiring an intimate knowledge of
foreign cultures.

Unlike TE questions, TI questions require the reader to detect a connection between the question and the answer. Consequently, further coding of TI questions was based on what is required to establish the connection. Two kinds of questions emerged from data analysis: paraphrase and contextual understanding. In paraphrase questions, a connection is to be established between the surface structure and the deep structure, which requires the reader to translate the overt expression of the text into the underlying message expressed in a different surface structure of the answer. Questions of contextual understanding require the reader to make sense of an unfamiliar word or phrase or to determine the contextual meaning of a familiar word or phrase with the help of the contextual clue. Vocabulary knowledge is essential but the decision ultimately depends on understanding the context in which the target word is used.

Question of paraphrase
Researchers discovered 100 products that could be made from sweet
potatoes.
Use the land more productively. (answer)
Question of contextual understanding
Skill in math is useful in preparing the required charts and graphs.
Computation skills (answer)

Scriptally implicit questions require the reader to possess or activate appropriate prior knowledge when processing the text information. Accordingly, these questions were coded in the kind of prior knowledge, specified by Dole and his colleagues (Dole, Duffy, Roehler, & Pearson, 1991) as general, topic, and text structure. General knowledge is also referred to as schematic knowledge acquired from cultural and social environments such as the reaction to the death of loved ones. Topic knowledge is specifically associated with the information relevant to the topic of the text. Text structure is how the ideas in a text are interrelated

to convey a message to a reader (Meyer & Rice, 1984), say cause and effect. In the coding process, another kind of prior knowledge emerged: the author's purpose. In the end, coding of SI questions resulted in four kinds of prior knowledge: general, topic, text structure, and the author's purpose.

Results

1. What comprehension skills are tested in the Nelson-Denny Reading Test?

Coding of the three types of questions in the comprehension subtest resulted in 18 TE questions, 10 TI questions, and 10 SI questions. Apparently, the test leans heavily on TE questions, which are characterized by a close question-answer relation due to explicitly cued text language. Tal and his colleagues (Tal et al., 1994) demonstrated that TE questions mainly measure the ability to locate explicit details and recall them correctly. It is especially so if the tested information is explicitly cued by the text language. In fact, most of the cued text segments are the reproduced verbatim from the question stem. Moreover, the cued text is located either before or after the answer, separated by no more than a few words, with the exception of only two questions, whose question-answer relation is not cued in the same sentence. Presumably, cued text is meant to assist recall because the cued text is supposed to lead students quickly to the specific information when they need to confirm what they remember reading. However, in order for this to happen, students must be aware of the potential deception of memory and the lookback strategy. Moreover, they must have time to look back. Ironically, most developmental students are non-metacognitive readers. That is to say, they do not monitor their reading or use strategies such as lookback to remedy their missteps, even if they have time to do so.

Ten TI questions test paraphrase and contextual understanding. These questions focus on text-based meaning construction, which involves the ability to identify a connection between the question and its answer either stated or implied in the text. In other words, the challenge rests more on understanding what is being asked than on finding the answer. In terms of language skills, TI questions demand extensive semantic and syntactic knowledge so as to detect the deep structure embedded in a variety of surface structures that meet the eye. Of the ten TI questions, seven test paraphrasing—the ability to grasp the essential meaning and express it in varied surface structures. The remaining three questions focus on the ability to determine the meaning of a target word using a contextual clue, thus measuring comprehension as well as vocabulary.

Ten SI questions test four kinds of prior knowledge: general, topic, text structure, and author's purpose. It is widely recognized that the successful use of prior knowledge reflects the ability to activate the relevant knowledge and then integrate it with the text. To read beyond the line as required by this type of question, readers must be capable of analytical skill and critical thinking. The latter two skills are essentially important in identifying the text structure and the author's purpose. In other words, SI questions also examine readers' ability to shift from the reader's lens to the writer's.

To sum up, the Nelson-Denny Reading Test covers a wide range of reading skills from locating details to understanding text-based information to making inferences to being aware of the author's purpose and the delivery of the message. Given the smaller number of SI questions, which require the reader to integrate prior knowledge with the text information, this test suggests an emphasis on the text, revealing the influence of an assumption that views reading comprehension as an act of extracting information from the text or reaching the author's intended message. Meanwhile, this test also reveals the awareness of the theory that views reading as a process of meaning construction through the interaction between the reader and the text based on the reader's prior knowledge. This is not surprising considering that the Nelson-Denny Reading Test was published in 1993, when the constructivist view of reading was beginning to gain currency among the reading community.

2. What does the result reveal about the strengths and weaknesses of the students?

This research question, designed to investigate students' strengths and weaknesses in the skills measured in the Nelson-Denny examined how many students on average gave the right answers to questions of a particular question type. The means of students who correctly answered TE, TI, and SI questions were 43, 23, and 25 respectively. A mean of 43 for TE questions indicated that on average 43 students correctly answered all the TE questions. In other words, 78% (43 out of 55) of the students were capable of locating and recalling detailed information tested in TE questions, displaying a general strength in locating textually cued details. In contrast, only 41% (23 out of 55) of the students showed solid language skills such as extensive vocabulary and paraphrase measured by TI questions, indicating that more than half of the students tested had a common weakness in basic as well as sophisticated language skills. The means also indicated that TI questions were far more challenging than TE questions. Between the two were SI questions—45% (25 out of 55) of the students seemed to lack the prior knowledge necessary to understand the test passages and the ability to

read critically. Further tests need to be administered to the students in order to pinpoint whether they lacked the knowledge or the cognitive capability to read critically.

Standard deviations (SD) of TE, TI, and SI questions showed the distribution of the numbers of the students who correctly answered the three question types, providing useful information to guide instruction. In other words, these SDs, which were 6.96, 6.55, and 8.97 respectively, could inform us of the variation in the difficulty level within each question type. For instance, the highest SD of SI questions displayed the greatest variation in the difficulty level among individual SI questions. Further examination into all the three question types sheds more light on the students' reading ability, accounting for the variance to a certain extent. The results are presented in four tables.

Table 1
Locations of cued text and students' performance in mean, SD, and the score range

Location	N	M	SD	Range
Before	12	43	7.19	26-53
After	4	39	6.16	31-46

Table 1 shows the influence of various cued texts on students' performance. The cued texts are categorized as before and after based on their location relative to the stated answer in the text. Two questions whose question-answer relation is not cued in the same sentence were excluded from the analysis. On average, the students responded better to a cued text preceding the answer than they did to one following the answer, indicating that most students were able to pick up the cue of the question-answer relationship when the cued text preceded the answer. In contrast, after-location proved a rather weak signal of question-answer relationship. Given that the test was administered under an extended time condition, it is possible that these students tended to read in a linear manner instead of going back and forth for remedial purpose.

On the other hand, the larger SD of before-location indicated greater variation in students' response to questions cued in before-location. It is possible that some factors shifted the difficulty level of before-location questions along the spectrum. The coding then focused on the grammatical structure of sentences that contained cued texts in both locations.

Table 2
Sentence structures of cued text and students' performance in mean,
SD, and the score range

Structure	Simple	Complex
N	12	5
M	45	39
SD	6.45	7.66
Range	31-53	26-46
	Basic	Complicated
N	8	4
M	48	38
SD	4.14	5.85
Range	40-53	31-45

   Table 2 presents TE questions cued in varied grammatical sentence structures and students' performance on them. Most of the TE questions were cued in simple sentence structure ($n = 12$), more than twice as many as were in complex sentence structure ($n = 5$). Compound sentence structure has been excluded from this discussion because only one was found in TE questions. The higher mean of simple sentence structure indicated lower difficulty level for the students than that shown by complex sentence structure. This is not surprising considering that simple sentence structure generally demands less cognitive capacity because of the absence of clauses. A lower SD of simple sentence structure also indicated a less variation in the difficulty level, which is also understandable given that some complex sentence structures are usually easier to understand such as those with clauses of time and cause. Because more cued text are in simple sentence structure, a pattern started to emerge in the coding process—sentences that contained such modifiers as participle, infinitive, and appositive showed a much lower mean than those without them. Apparently, their difficulty level was higher than that of basic simple sentences. Indeed, some of the embedded simple sentences seemed less readable than some complex sentences—39 students correctly answered the questions cued in complex sentences while 38 students correctly answered the questions cued in embedded simple sentences.
   Of the four after-location cued text, the fewest students ($n = 31$) correctly answered one question cued in a embedded simple sentence;

slightly more students ($n = 39, 40$) answered correctly two questions cued in complex sentences; and most students ($n = 46$) correctly answered one question cued in a basic simple sentence. If the number of after-location cued text is too small to draw a conclusion about the difficulty level of those sentence structures, it is equally too hasty to explain it away as sheer coincidence considering the larger context outlined above. It is possible that an interaction between sentence structure and the cueing system as well as inadequate knowledge about sophisticated sentence structure and linear reading habit could have prevented some students from otherwise recognizing an explicit question-answer relation.

Table 3
Subtypes of TI questions and students' performance in mean and SD

Question type	Textually Implicit	
M	23	
SD	6.55	
Subtype	Paraphrase	Contextual understanding
N	7	3
M	25	17
SD	6.31	3.06

Table 3 shows students' performance on two subtypes of TI questions: paraphrase and contextual understanding. The low mean (17) and SD (3.06) showed not only few correct answers to questions of contextual understanding but also a more convergence in the difficulty level among these questions. In other words, the students demonstrated a general weakness in word knowledge and an inability to make sense of the target words by means of contextual clues. In fact, the lowest SD across all questions highlighted either a small vocabulary size or low level word knowledge or the two combined among the students. The low mean of paraphrase questions indicated that on average fewer than half of the students were able to grasp the underlying message framed in two surface structures—one in the text and the other in the answer. For many, their literacy level did not go beyond the stated text to the underlying message. It is likely that low level word knowledge was so intertwined

with an inability to capture meaning differently phrased that questions demanding such knowledge and ability inevitably placed the greatest challenge on these students.

Table 4
Types of knowledge tested in SI questions and students' performance in mean and SD

Question Type	Scriptally implicit			
M	25			
SD	5.66			
Subtype	General	Topic	Text Structure	Author's Purpose
N	2	4	2	2
M	35	21	21	25
SD	9.90	4.90	14.41	7.78

  Table 4 presents students' performance on the four types of prior knowledge tested in SI questions. General knowledge yielded the highest mean, much higher than the means of three other types of knowledge, suggesting that these students had a larger repertoire of cultural knowledge than schooled knowledge. On the other hand, the second highest SD pointed to two possibilities: either some did not possess the necessary prior knowledge or failed to activate and integrate it with the text. The highest SD of text structure questions suggested the influence of exposure: comparison and contrast is typically used in expository writing whereas sequence is the frequent organizational pattern found in narrative. While expository is learnt in school, narrative is acquired in everyday life. The variance in the two questions on text structure seemed to fit the profile of these students, who had completed K–12 schooling but somehow failed to learn much of the knowledge taught in school. The variance in the two questions on author's purpose pointed to at least two possibilities. First, the students were not aware of the semantic difference between inform and explain. Second, students might have developed a misconception: informational text is about informing rather than explaining, which was probably the result of instruction that focused more on remembering than understanding the information. Finally, the lowest mean and SD in topic knowledge suggested a general

lack of necessary background knowledge among these students.

To sum up, most of the students were able to locate and recall detailed information as required of TE questions. However, this strength was weakened when the cued text was nonlinearly presented or expressed in sophisticated sentences with embedded clauses or phrases. TI questions revealed a general weakness in synthesizing constitutes into some semantically integrated chunks because of a limited vocabulary and limited semantic and syntactic knowledge. SI questions indicated obvious lack of schematic knowledge necessary to make contextual connections and prompt in depth understanding, suggesting an inadequate amount of school related reading. Cognitively, these students showed a weakness in reading strategy, inference, and critical thinking. All these weaknesses in language, prior knowledge, and cognition were both the effect and cause of their overall poor performance in comprehension.

Discussion

The coding of question-answer relations identified 47% TE questions in the test, which mostly tap readers' perceptual matching skill involving intentional use of a lookback strategy. Such a matching skill is generally tested in the form of reproductive recall of explicit details presented in the text. TI and SI questions together accounted for 53% of the comprehension subtest, which measure readers' comprehension involving higher-level language skills and relevant prior knowledge. Since recall of details is a distinct cognitive process from other comprehension skills (Guthrie & Kirsch, 1987), the distribution of three types of questions has theoretical and practical implications. Theoretically, the focus reflects a slow transitional process in which a traditional text-centered view of reading as extracting information from text was gradually giving way to a constructivist view of reading as a sophisticated process of meaning construction involving the interaction between the reader's prior knowledge and the text. Every standardized reading test is designed with an underlying theoretical view of reading that defines what reading means and determines what will be tested.

Practically, it is important to analyze standardized tests in terms of question types prior to interpreting the scores of testees. In the case of the Nelson-Denny Test, a high score may identify a reader with good matching skill as well as efficient use of the lookback strategy. But a high score may not identify a reader of sophisticated reading skills because of the relatively smaller number of TI and SI questions. In other words, the test may be more effective in spotting low skill readers than high-skill ones. Therefore, caution should be taken when the test is used to group readers in terms of reading ability. More important, the distribution of

question types raises the issue of construct validity in the standardized tests, which becomes crucial when they are regarded as an objective assessment tool and used for accountability.

Close analysis of the students' response to cued text in TE questions revealed that how information was presented and cued would affect how well it was recalled, showing the effect of sentence structure and cueing system upon recall performance. This finding supported the previous research which found that syntactic factors were primarily responsible for the reduction of cognitive capacity (Britton, Glynn, Meyer, & Penland, 1982). Given that the test was administered in extended time, it was likely that some students could have done better in recall had they looked back to remedy their reading.

The students' poor performance on TI questions indicated their weakness in using contextual clues and detecting a message restated in different words and sentences. The finding is consistent with the conclusion from earlier research that poor readers were compelled to make more use of contextual clues because of their limited vocabulary but rewarded less than good readers due to their limited meaning making skill. The consequence termed as "Matthews Effect" by Stanovich in his classic article (1986) vividly captured the dilemma of poor readers becoming poorer, which seems to mirror the dire situation of these developmental students who are supposed to learn subject matters and yet lack the language skills and reading ability to comprehend what is presented to them. While both cognitive and linguistic factors may have played a role in their poor comprehension, the students' lowest performance on TI questions suggests that lack of language skills could be devastating and consequential. Therefore, greater attention should be given to language skills in developmental reading instruction

The presence of SI questions bears the influence of the cognitive constructivist model of reading, which emphasizes the role of prior knowledge in reading process. Lack of relevant prior knowledge will prevent the reader from going beyond the information given. On the other hand, a reader with prior knowledge may not understand the text if the knowledge is not brought to bear in the comprehension process (Bransford & Johnson, 1972). Therefore, the students' poor performance on SI questions could be attributed to the lack of relevant prior knowledge and the failure to bring it to the comprehension process. Symons and Pressley (1993) found that the state of prior knowledge affected locating information. When examined in the context of the students' performance on TE questions, it is reasonable to conclude that the lack of the relevant prior knowledge was a primary factor adversely affecting their performance on SI questions. This conclusion was also supported

by a survey conducted at the beginning of the semester, which showed that these students rarely read in their free time and that their reading experience was largely confined to fiction depicting a life experience familiar to them.

Another notable observation of SI questions is the low mean on text structure. This deficiency should be given immediate instructional attention given that knowledge of text structure underlies effective expository comprehension (Englert & Hiebert, 1984). Moreover, knowledge of text structure is particularly important for helping readers to differentiate important from unimportant information (Meyer & Rice, 1984). In other words, knowledge of text structure will facilitate understanding of expository writing and identifying important ideas in it. For example, if students realize that the text is about classification, they will direct their attention to the number of categories as the result of the classification, the distinctive feature of each category, and the criterion upon which the classification was made. Englert and Hiebert (1984) noted that knowledge of text structure would grow as children reach the upper elementary grades. But these developmental students showed that poor readers could have missed the natural growth of this knowledge or the missing of such growth reduced them to poor readers.

The ongoing data analysis of this study indicated that the three types of questions remain an effective instrument to understand standardized reading tests in terms of what is measured and stressed. On the other hand, this study found that the three types of questions are insufficient to guide instruction. Subtypes of each type need to be identified so that the strengths and weaknesses of students taking a standardized test can be addressed during instruction.

In conclusion, the findings highlighted a considerable lack of language skills and prior knowledge among these students, particularly of topic and text structure. The combined effect of the two factors had crippled their ability to retain information, construct meaning out of varied sentence structures, understand new concepts, and take a critical eye of the information and the author. In addition, the findings indicated that while the question-answer relations are useful to pinpoint reading or cognitive skills measured in standardized tests, analysis of subtypes of questions will provide teachers with students' weaknesses and strengths so that students can be helped in an effective and timely manner.

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