

## **Questioning and Informational Texts: Scaffolding Students Comprehension of Content Areas**

Ioney James and Tyrette S. Carter

Ioney James, Associate Professor, School of Education, North Carolina A & T State University

Tyrette S. Carter, Assistant Professor, School of Education, North Carolina A & T State University

### **Abstract**

This article focuses on the use of questioning strategies to promote comprehension of informational texts. It proposes that if students gain personally effective questioning strategies for comprehending informational text and a sense of self-efficacy in using these strategies independently, before they enter middle and secondary grades, their chances of school completion, and success will be enhanced. It challenges teachers to model appropriate questions. In addition this article highlights three questioning strategies teachers can use to help student generate quality questions.

### **Questioning**

Historically and currently, teachers use questioning as a mode of teaching, learning and assessing students' understanding of texts (Durkin, 1978/ 1979; Pressley, 2000). Across disciplines, teachers utilize questioning to promote memory, inquiry, stimulation of thinking and in-depth processing of complex concepts (Feldman, 2003; McKeow & Beck, 2003). Questioning, as described by Harvey and Goudvis (2000, 81), is "the master key to understanding. Additionally it is a stimulus for student talk, engagement, and quest for new knowledge.

According to the reasoning of Harvey and Goudvis (2000; Caram & Davis), human beings have a insatiable thirst for knowledge and for making sense of the world, so, they are continuously searching for answers. This natural drive to search for answers and ideas, according to these educators, is embedded in the minds of all students, and the love of reading can stir up/rouse an innate curiosity that stimulates questions and triggers a desire to search deeper into texts for meaning. The desire to become engaged readers, however, is often not shared by all students, mainly because, they do not have "the spur of motivation nor competency in reading"(Vacca, 2006, 57).

Questioning is always considered a valuable tool to stimulate student learning. Teachers, therefore, are being encouraged to use appropriate questions to activate students' prior knowledge, as well as to actively engage them in the exploration and transformation of knowledge. The challenge for teachers is to scaffold students' learning by offering explicit instruction, modeling and, most importantly, asking elaborate questions that lift students' sense of self-efficacy and prepare them to tackle difficult texts (Vacca, 2006).

During the past several decades, there has been a great deal of research on how to improve students' reading comprehension. An outcome of this research is a plethora of literature that emphasizes the need for teachers to provide multiple opportunities for students to make meaningful connections with texts. Through reflective thinking and delving deeper into texts as students do search for answers to their questions. Significantly, taxonomies such as Bloom's (1956); Barrett's (1968) and Taba (1975) were published to help teachers simplify the task of teaching reading comprehension by using a range of questioning strategies and importantly to pose more higher-level questions around texts.

Research on questioning patterns in the classroom generally refers to Durkin (1978/1979) classical studies in which she observed teachers' and students' interaction around texts. The findings from one of her studies, conducted in 36 intermediate-grade classrooms, indicated that there was very little evidence of instruction on comprehension strategies for understanding texts. According to the findings, the bulk of teachers' questions required students' responses that were mostly recitation and recall of information from texts. In general, the questioning pattern of the classroom discourse followed a three part sequence of teacher-controlled initiation, student response and teacher evaluation (IRE) patterns (Bullock, et al. 1996; Mehan, 1979). Durkin (1978/1979) observed also that teachers tend to ask questions after the reading of a text, and students' responses to questions were usually short and at the literal level. This question-answer format, is one which often led to students assuming that their role in the discourse was only to answer the questions at the end of the story or those posed by the teacher.

For over two decades, Durkin's study has influenced a substantial amount of research on comprehension. However, recent research offers evidence that there is not much change in questioning patterns, with regard to the levels of questions teachers ask in the classroom (Pressley, 2006; Richardson, Morgan and Fleener, 2006; Nettles, 2006). Similarly, Christopher and Nystrand (2001) observed that 80% of teachers' questions in secondary schools elicit recall and recitation responses. Pressley (2006) also noted that there was no evidence of instruction that offers students strategies on self-regulation or how to become active participants in the comprehension process. He wrote, "It was not uncommon for students to be asked to respond to questions requiring them to summarize what they read, identify confusing points in a text, construct questions pertaining text, or predict what might be next in a text" (Pressley, 2006, 299).

It is well established that the level of students' thinking is usually shaped the quality of teacher's questioning. (Harrop & Swinson, 2003; Lloyd, (2004). However, as the research clearly indicates, there has been very little change in classroom teachers' question-answering practices around texts.

Questioning techniques and informational text strategies are vital to students success in school. Often, however, teacher questioning strategies are not effective in the classrooms (Richardson, Morgan & Fleener, 2006). Nettles (2006) asserted that teachers often fail to ask appropriate questions in the classroom because they tend to make the assumption that students already know the comprehension process, or that the strategies they use to read narrative texts can be transferred to expository or informational texts. Because some teachers are not strong in their content knowledge or have a deeper understanding of the text themselves, they have difficulty asking the higher level questions (Schaffer,

Another reason for the poor attempt at appropriate questioning relates to teachers failing to match the questions they ask with students' ability. Also critical is that a number of teachers are sometimes not able to label the various types or levels of questions they pose to students neither can they identify the actual levels of students' responses to their questions. Because the questions teachers ask are often not well-prepared, they are often not effective in strengthening students' proficiency in comprehension.

### **Comprehension of Texts**

Reading comprehension is key to school success. To help students construct meaning from texts, it is important that teacher offer explicit instruction in comprehension strategies. This entails offering the rationale for the strategies, modeling and providing independent guiding practices in authentic contexts. Some components of comprehension strategies necessary to understand texts in general include (1) activating prior knowledge (2) question-generating, (3) images constructing, ( 4) summarizing (5) identifying important information in texts (Pressley (2000, 554).

Teachers should be knowledgeable about the comprehension strategies, necessary to address the variations in the text structure. It is important therefore, to encourage students to consider the differences in the structure of narrative and expository texts.

From the early grades reading of narrative texts are commonly used in most classrooms. Most students find the reading pattern of narrative to be predictable. They are generally

organized in a story form. In general, narrative texts have characters, have a plot and settings, are temporarily ordered and are goal-based (Yopp and Yopp, 2000; Walsh & Blewitt (2006). Narrative texts typically used common everyday vocabulary. Expository texts however, are different from narrative texts. Explicit and direct instruction is necessary to allow students to understand how the reading patterns differ from narrative to expository texts. The main distinction between expository or informational texts and narrative texts is that informational texts consist of linguistic features such as technical vocabulary, headings and generic knowledge.

### Informational or Expository Texts

Expository or informational texts form the bulk of student reading from grade four and on into middle and secondary school. Informational texts serve many purposes. First, informational texts act as sources of answers to children's questions about the world. Second, they help to build and refine schema crucial to text comprehension. Third, they expose students to specialized vocabulary in each of the genres. Fourth, they offer information on rich language patterns and diverse text structures. Informational texts stimulate discussions and serves as a catalyst for children's interest (Yopp and Yopp, 2006).

Reading in the subject areas such as mathematics, social studies and science can be quite demanding because of the varied texts' structure, purpose, substantial conceptual load and technical vocabulary (Duke, 2000). The difficulties posed by informational texts become more pronounced when readers must define a specific task, search for information, select the resources themselves and synthesize an important content from multiple sources (Coiro & Dobler, 2007)..

To successfully comprehend informational texts teachers are encouraged to help students gain an understanding of the different language choices and communicative strategies that are characteristics of each academic discipline. Teachers, therefore, must call students' attention to the features of content informational texts across disciplines and model appropriate questioning patterns around texts. Scaffolding of expository structure entails gradual release of responsibility for selecting and using the appropriate comprehension strategies, guide practices and gradual release of the strategies to the students' independent control. Also, important is teacher modeling to the type of questions students should ask before, during and after reading informational texts.

### **Teacher-Questioning**

The literature indicates that the level and quality of questioning that teachers pose in the classroom does have significant effects on students' understanding (Harrop & Swinson, 2003). For instance, if a teacher asked her class the question, "How many days are in a week?" Obviously, the responses expected from all students would definitely be that there are seven days in a week. However, if she asked, "Which is your favorite day of the week to go shopping?" the expected responses would vary. Again, if she asked, "What would you do if Monday was not a school day?" The responses from the class would be even more divergent. From these questions as well as the expected responses, it becomes obvious that the level of each of these questions demands different levels of thinking, therefore different kinds of responses.

Recently, I asked a group of pre-service and in-service secondary school teachers, in one of my content area classes, to read a story which was written at the second grade level and then use Barrett's Taxonomy to compose and label the cognitive characteristics and hierarchical structure of each of the questions. These include, for example, recognition and recall of details, main ideas, causes and effects, character traits, making predictions, and judgment of worth. Barrett's taxonomy consists of four levels of thinking: literal, interpretation, evaluation and appreciation. It focuses on the affective and cognitive domains of comprehension. (See Appendix 1).

When the pre- and in-service teachers began reading the story, many of them questioned why they had to read a story, which was below their grade level. At the initial stage of the assignment, they found writing recall and recognition questions, such as main ideas, character traits at the literal level fairly easy, considering, that questions at the literal level require answers that are directly stated in the texts. However, the task became more challenging as they composed questions that required them to make inferences, judgments, evaluate the worth of the text, or empathize with the characters. After many opportunities to practice asking questions at the various levels with material from their respective content areas, these pre-and in-service teachers demonstrated proficiencies, so the tasks became less tedious.

The overall reflection of the tasks by the pre- and in-service teachers was that to facilitate a deeper understanding of texts by students, it was important to become more thoughtful in the preparation of questions they ask their students. They also commented that it was important for teachers to be mindful of the responses from students. The overall outcome of this activity was that those pre-and in-service teachers became more aware of the need to consider the quality of

questions they pose, as well as how they distribute questions in regards to the students' level of comprehension.

The lesson learned from this activity is that teacher questioning is an appropriate instructional frame that facilitates students' comprehension of texts (Durkin, 1978/1979) To allow students to become active, motivated and strategic learners, there is a critical need for teachers to consider the art of questioning by becoming more aware of their questioning patterns and especially, paying more attention to differences in the questions they ask each student. Equally important is the need for teachers to consider the impact of their questioning strategies on students' comprehension, more so, students' responses to questions around texts or content.

Not only can these questioning techniques enhance students reading strategies, but these techniques can also be used to help develop students' conceptual understanding of vocabulary, problem solving, procedures and critical thinking in the content area. Specifically, my colleague uses some of these approaches with the training of the pre-service teachers through an Interview Process approach. The National Council of Teachers of Mathematics states that using questioning aids in students' mathematical learning processes (NCTM, 2000). Through utilizing questions in a one-on-one interview or a whole class interview on a particular concept, students learn to think beyond the procedures and begin to reason and determine the why and how. The teacher also is able to assist students with constructing their understanding of the concepts.

The pre-service and in-service teachers are trained to ask questions such as: "How did you reach that conclusion? What assumptions are you making? Have you thought of all the possibilities? How can you be sure? Can you convince the rest of us that your answer makes sense? What decision do you think he/she should make?....." (PBS, 2006, 1). The pre-service and in-service teachers are trained in the classroom and are required to practice on a small group of students to a whole class. These questions do not merely get at the answer for a particular problem, but the questions help students clarify knowledge, analyze different techniques, apply these techniques to other problems, synthesize and evaluate results. All of the strategies found within the mathematics questioning are often relevant skills in to enhance students' reading skills and comprehension. The practicing and novice teachers find that these skills help guide their instruction to effect change in the learning of mathematics.

### **Student Generated Questions**

Although teacher questioning is significant to learning, student-generated questions are of even greater importance to comprehension of texts. Harvey and Goudvis (2000, 82) wrote, "...a reader with no questions might just as well abandon the book". Gunning (2000, 230) referred to question-generating as an affective strategy that transforms the reader from passive observer to an active participant. Additionally, it fosters active awareness of the comprehension process. On the issue of providing opportunities for student-generated questions in the classroom, Harris and Sipay, (1999) asserted that providing opportunities for students to ask questions is tantamount to allowing them to assume responsibility for their own learning, thus becoming independent learners.

There is converging evidence that students who generate their own questions improve their comprehension in comparison to those who merely answer the teachers' questions (Harris & Sipay, 1990; Pressley, 2000). In addition, good students ask questions of themselves at different stages: before, during and after they read (Harvey & Goudvis, 2000; Miller, 2000; Tabaoda & Guthrie, 2006). Research also says that there is an interrelationship between students' questioning patterns and their prior knowledge (Tabaoda & Guthrie, 2006). Students' search for information is based on their existing knowledge structure. Their existing prior knowledge can be activated through pre-reading questioning. Student-generated questions at the pre-reading stage activate prior knowledge, which ultimately aids comprehension of texts (Tabaoda & Guthrie, 2006). The knowledge that students learn to generate questions to develop a more conceptual understanding provide valuable information for the teacher and student-generated questions around texts. This article focuses on strategies teachers can use to enhance students comprehension of informational texts.

### **Strategies to enhance comprehension of Informational texts**

Over the past few decades, the extensive studies on comprehension have generated much information about the effectiveness of questioning on students' learning. Professional literature is rife with suggestions on the importance of questioning as well how to generate relevant appropriate questions. Some suggestions on how teachers can construct good questions as discussed by Richardson, Morgan and Fleener (2006) include

- asking simple questions
- identifying the purpose of each questions

- sharing with students the reasons for each question
- encouraging students to ask questions about the teachers' inquiries as well as asking their own questions
- providing opportunities for students to practice answering questions at various levels of comprehension
- making allowance for discussions, which provides practice in constructing and responding to questions

Numerous strategies to enhance students' comprehension of informational texts have been studied. This article highlights three effective reading strategies teachers in any content area can use to promote the comprehension of informational texts. They are: the Reciprocal Questioning (REQUEST) Question-Answer- Response (QAR); and Questioning the Author (QtA) strategies.

### **REQUEST or Reciprocal Questioning**

Reciprocal Questioning according to (Palinscar, David and Brown 1986, 2) is an instructional procedure originally designed to enhance students' reading comprehension". The procedure is best characterized as a questioning strategy which can be used in all grades and at every comprehension level. It helps students analyze their comprehension while reading. This strategy involves dialogue between teacher and student to help understanding. Teacher and students take turns assuming roles. The four areas of reciprocal include predicting, questioning, classifying and summarizing.

### **Questioning the Author, QtA ( Beck & McKeown(,1997)**

Questioning the Author (QtA) is another instructional intervention designed to "facilitate the building of understanding of text ideas through the use of queries and discussions" (Beck, et al., 1997). Additionally, it is geared toward helping students independently construct meanings from texts and monitor the extent to which they understand.). The QtA strategy encompasses planning, discussion and implementation This questioning strategy tries to actualize the presence of the author Its main purpose for the implementation of this comprehension strategy is to allow students to explore the message the author is conveying in texts.



In constructing meaning from texts, the teacher reminds her students that authors are fallible, therefore, it is important to ask questions of the author when the text does not make sense to the students. According to Beck and McKeown (2006). The QtA framework helps students build understanding from the text during reading. The key to this strategy is that students are engaged in discussion in the course of reading. Throughout the discussion, the teacher is an active participant, but it is the responsibility of the students to construct meaning from the text. The responsibility of the teacher is to probe students thinking using queries. At the onset students are shown examples of information that might not be clearly written in a text as they might be. The teacher, then prompt students to read the texts using a series of questions:

- What is the author trying to say?
- Why is the author telling you that?
- It is presented so that you can understand it?

This strategy which help students search for answers, as Reutzel and Cooter (2008), remarked encourages active engagement. Through questioning, the teachers help students, recast the authors ideas, especially when they encounter difficulties understanding the texts. They are encouraged to ask questions such as: How could you have expressed the ideas to make them easier to understand? What would you say instead?

According to research, questioning the QtA strategy has increased in responses of both literal and inferential questions( Sandora, Beck & Mckeown, 1999).

### **QAR- Question Answer and Response ( Raphael , 1982, 1986)**

The Question. Answer- Response (QAR) is another instructional intervention that teaches students to focus on texts as well as their background knowledge when responding to questions. The underlying principle is that there are basically two places to look for answers when reading a book: In the book, or in your head. This procedure consists of four question types: Where is the answer to the questions?

Right Here--- In the Book—The answer is right there.

In My Head --- Making Inference

The Author and Me --- Think and search—the answer is in the text.

On My Own ---- The answer is not in the text; reader does not need to use the book to arrive at the answer to the question. This procedure requires teachers to model this procedure by labeling and answering at least one question at each QAR level. Although this strategy seems straightforward and easy to implement it does not pinpoint which of the questions that teachers can ask at the various levels.

QAR is used by teachers before, during and after reading. It is commonly used to problem solved. This process states that you must understand the problem, devise a plan, carry out the plan and look back. Although this is a very popular strategy, some reading strategies such as the QAR strategy can be integrated into the four-step process to help students understand the text and become better problem solvers. When the students read the problem, they should ask if this is a “Right There” question, one that requires one correct answer or a one word or short response.

Over all the The QAR strategy demonstrates the relationships between the text and the answers. It is unique, in that it can be used across subject area.

### **Conclusion**

Questioning is vital to classroom learning. Students need to see demonstration of quality questioning practices, The challenge to teacher, is offer direct, explicit instruction in questioning and comprehension strategies It is also important the instruction of best practices occur in the context of meaningful reading Teachers also need to consider that in using questioning to scaffold students engagements with texts that the essential goal should be for the students to ask and answer their own questions. When students ask their own questions, then will be motivated to seek new knowledge. Student-generated questions can offer insights into their thought processes and provide a point from which teaching and learning can begin. The strategies included are invaluable in enhancing students comprehension.

It is also important for teachers to model questioning practices that allow students to think beyond the facts that are embedded in texts. To facilitate the quest for knowledge among our students, we must ask questions that trigger the desire to dig deeper into texts. An important consideration for teachers is to be mindful of the kinds of questions we model.

## Forum on Public Policy

### References

- Barrett T. C. 1968. What is reading? Some current concepts. In *Innovation and Change in Reading Instruction*. The sixteenth handbook of the National Society for the study of education. ed. H. M. Robinson. Chicago: The University of Chicago Press.
- Beck, I. L., McKeown, M. G., Sandora, C., Kucan, L. & Worthy, J. (1996). Questioning the Author: A yearlong classroom implementation to engage students with texts. *The Elementary School Journal*, 96 (4). 385-414.
- Bloom, B. (1957). *Taxonomy of educational objectives*. New York: David McKay.
- Beck, I. L., McKeown, M. G., S., C. & Kucan, L. (1999.) *Questioning the Author: An approach for enhancing student engagement with text*. Newark, Delaware: International Reading Association.
- Coiro, J. & Dobler, E. (2007). Exploring the On-line reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the internet. *Reading Research Quarterly*, Vol . 42(2) pp. 214-257.
- Calaprice (1996). *The Quotable Einstein*. Princeton, NJ: Princeton University Press.
- Caram, C.A. & Davis, P.B.(2005) Inviting student engagement with questioning. *Kappa Delta PI Record*. 19-23.
- Christopher J. & Nystrand, M. (2001) Taking risks, negotiating relationships: One teacher's transition toward a dialogic classroom. *Research in the Teaching of English*, 36, 249-286.
- Coiro, J. & Dobler, E. (2007). Exploring the On-line reading comprehension strategies used by sixth-grade skilled readers to search for and locate information on the internet. *Reading Research Quarterly*, 42(2) pp. 214-257.
- Duke, 2000). *Reading Instruction that works: The case for balanced reading*. New York. Guilford
- Durkin D.(1979). What classroom observation reveal about reading comprehension. *Reading Research Quarterly*, 14, 518-544.
- Feldman, S. (2003). The right line of questioning. *Teaching preK-8* 33 (4): 8.
- Foote, C. (1998). Student-generated higher order questioning as a study strategy. *Journal of Educational Research* 92 (2): 107-113.
- Gauthier, L. (2000). The role of questioning: beyond comprehension's front door. *Reading Horizons* 40 (4): 239-252.
- Gunning, T. (2000). *Creating Literacy Instruction for all children* Boston: Allyn & Bacon.
- Harrop, A. & J. Swinson (2003). Teachers' questions in the infant, junior and secondary school. *Educational studies* 29 (1): 49-57.
- Harvey, S. (1998). *Nonfiction matters: reading, writing and research in grades 3-8*. New York, ME: Stenhouse.
- Harvey, S. &. Goudvis, A. (2000). *Strategies that work*. Portland, ME: Stenhouse.
- Keene, E. & Zimmerman, S. (1997). *Mosaic of thought*. Portsmouth, NH: Heinemann.

## Forum on Public Policy

- McLaughlin, M & Allen, M.B.(2002) Guided comprehension: A teaching model for Grades 3-8. Newark , Delaware: International Reading Association.
- McIntosh, M. E. and Draper, R. J (October, 1995). Applying the question-answer-relationship strategy in mathematics. *Journal of Adolescent & Adult Literacy*. 39:2
- McKeown, M. G., & Beck, I. L. (2001). Designing questions toward thinking and understanding rather than answers. *Perspectives*, Baltimore, MD: International Dyslexia Association.
- Mehan, H. (1979). *Learning lessons: Social organization in the classroom*. Cambridge:
- Musser, G. L., Burger, W. F, & Peterson (2006). *Mathematics for elementary teachers: A conceptual approach*. Prentice Hall: Upper Saddle River, NJ
- National Council of Teachers of Mathematics ( 2000). <http://standards.ntcm.org>.
- Nettles, D.H. *Comprehensive Literacy instruction in today's classrooms: The Whole, the parts and the heart*. Boston, Allyn & Bacon.
- No Child Left Behind Act of 2001, Pub. L. No 107-110.
- Palinscar A.S. & Brown , A.L.(1984).Reciprocal teaching of comprehension-fostering and comprehension-monitoring *Cognition and Instruction*, 2, 117-175.
- PBS 20006. Questioning techniques for classroom. [www.pbs.org /teacher line](http://www.pbs.org/teacherline)
- Pearson, D. & M. Gallagher. (1983). The instruction of reading comprehension. *Contemporary Educational Psychology* 8: 317-344.
- Pearson, D., J. Dole, G. Duffy & L. Roehler. (1992). Developing expertise in reading comprehension: what should be taught and how should it be taught? In *What research has to say to the teacher of reading*, ed. J. Farstrup & S. Samuels. 2<sup>nd</sup> ed. Newark, DE: International reading Association.
- Petress, K. (2005). Questions and answers: the substance of knowledge and relationships. *College student journal*: 374-376.
- Pressley, M. (2000). What should comprehension instruction be the instruction of? In R. Matt, M.L. Kamil, P. Mosenthal & P.D. Pearson (Eds.), *Handbook of Reading Research*, 2, 609-640). White Plains, N.Y: Longman .
- Pressley, M. & P. Afflerbach. (1995). *Verbal protocols in reading*. Hillsdale, NJ: Erlbaum.
- Raphael, T. E. & Wannacot, C. A. (1985). Met-cognitive training in question-answering strategies. *Implementation in a fourth grade developmental reading program*. *Reading Research Quarterly*, 20, 282-296.
- Richardson, J.S., Morgan, R and Fleener, C. (2006). *Reading to Learn in the content areas*. California: Thomson Wadsworth.
- Rosenshine, B., Meister, C. & Chapman, S. (1996). Teaching students to generate questions. A review of intervention studies. *Review of Educational Research*, 66 (2) 181-221.
- Salinger, T. & S. Fleischman. (2005). Teaching students to interact with text. *Educational leadership* 63 (2); 90-92.
- Sandora, Beck & McKeown (1999). A comparison of two discussion strategies on students' comprehension and interpretation of complex literature. *Reading Psychology* 20 (3) 177-212.
- Spires, H. A. & Donley, J. (1998). Prior knowledge activation: Including engagement with informational texts. *Journal of Educational Psychology*, 90(2) 249-260.

## Forum on Public Policy

Taba, H(1975). Teachers' handbook for elementary social studies. Reading , MA: Addison-Wesley

Tabaoda, A. & Guthrie, J. T (2006) Contributions of student questioning and prior knowledge to construction of knowledge from reading information text. *Journal of Literacy Research* , 38(1). 1-35.

Vacca, R.T.( 2006). They can because they think they can. *Educational Leadership* , 63(5) 56-58.

Walsh, B. & Blewitt, P. (2006). The effect of questioning style during storybook reading on novel vocabulary acquisition of preschoolers. *Early childhood education journal* 33 (4): 273-278.

Yopp, R. H. and Yopp, H. K. (2000). Sharing informational texts with young children. *The Reading Teacher*, 53, 410-423.

Yopp, R. H. & Yopp, H. K. (2006). Informational texts as Read-alouds at school and at home. *Journal of Literacy Research* 38(1) 37-51.

Published by the Forum on Public Policy

Copyright © The Forum on Public Policy. All Rights Reserved. 2006.