

## Reciprocal Teaching for Reading Comprehension in Higher Education: A Strategy for Fostering the Deeper Understanding of Texts

Peter E. Doolittle, David Hicks, and Cheri F. Triplett  
*Virginia Tech*

William Dee Nichols  
*University of North Carolina – Charlotte*

Carl A. Young  
*Virginia Tech*

Assigning students the reading of historical texts, scholarly articles, popular press books, and/or Internet publications is common in higher education. Perhaps equally common is instructor disappointment in students' comprehension of assigned readings. This lack of good reading comprehension skills is exacerbated by the central role of reading comprehension in higher education success. One solution to this problem of poor reading comprehension skills is the explicit teaching of reading comprehension strategies to both undergraduate and graduate students, specifically, reciprocal teaching. In the following article the foundations and methods of reciprocal teaching are defined and then each author, in turn, delineates how he or she uses reciprocal teaching in his or her classroom. These examples demonstrate the flexibility and transferability of this basic strategy as the five authors teach in an array of domains.

Assigning students the reading of historical texts, scholarly articles, popular press books, and/or Internet publications is common in higher education. Perhaps equally common is instructor disappointment in students' comprehension of the assigned readings. That is, "although every student knows how to read, many have never learned good reading skills" (Royse, 2001, p. 127). This lack of good reading skills is exacerbated by the central role of reading comprehension in higher education success. According to Hart and Speece (1998), "one of the greatest demands on students attending post-secondary institutions is the comprehension of many different and difficult texts" (p. 670).

One solution to this problem of poor reading comprehension skills is the explicit teaching of reading comprehension strategies to both undergraduate and graduate students (e.g., reciprocal teaching, SQ4R, induced imagery). Hodge, Palmer, and Scott (1992) determined that college-aged students who were ineffective readers often did not monitor the comprehension of their reading, and rarely instigated any strategies to adjust to deficiencies in reading comprehension. In addition, Meyer, Young, and Bartlett (1989) demonstrated that explicit instruction in reading comprehension strategies is an effective means for improving reading comprehension in adults. Unfortunately, explicit instruction in reading comprehension is rarely taught at the higher education level (see Pressley, Woloshyn, Lysynchuk, Martin, Wood, & Willoughby, 1990; Wilson, 1988).

If strategy usage is known to be effective in promoting reading comprehension, why do instructors and students not employ such strategies? Several reasons may apply: students may not see the relationship between strategy use and success (Butler &

Winne, 1995); students may have too little prior knowledge, relative to the task at hand, to employ particular strategies effectively (Carpenter & Just, 1986); students may be more focused on grade performance than on knowledge acquisition (Mayer, 1996); students may view strategy usage as too demanding or difficult (Palmer & Goetz, 1988); and, instructors may assign tasks that are too simplistic to warrant the use of explicit strategies (van Meter, Yokoi, & Pressley, 1994).

Given that the explicit teaching of reading comprehension strategies has been demonstrated to be effective in enhancing learning and performance (see Hattie, Briggs, & Purdie, 1996; Rosenshine, Meister, & Chapman, 1996), the question arises, "What comprehension strategies can be effectively employed in the college classroom?" One answer to this question is reciprocal teaching. In the following sections, the foundations and methods of reciprocal teaching are defined and then each author, in turn, delineates how he or she uses reciprocal teaching in his or her classroom. These examples demonstrate the flexibility and transferability of this basic strategy.

### *Reciprocal Teaching*

Reciprocal teaching is an instructional strategy based on modeling and guided practice, in which the instructor first models a set of reading comprehension strategies and then gradually cedes responsibility for these strategies to the students (Brown & Palincsar, 1989; Palincsar, 1986; Palincsar & Brown, 1984). Specifically, reciprocal teaching consists of three main components, (a) the teaching and learning of specific reading comprehension strategies, (b) the dialogue between a instructor and students where the instructor

models why, when, and where to use these reading comprehension strategies, and (c) the appropriating of the role of the instructor by the students, that is, students begin to model the reading comprehension strategies for other students. Thus, the goals of reciprocal teaching are for students to learn the reading comprehension strategies, learn how and when to use the strategies, and become self-regulated in the use of these strategies.

The general methodology of reciprocal teaching involves the instructor and students, usually in small groups, reading a section of text. The instructor then leads a discussion of the text, while modeling appropriate reading comprehension strategies. During this dialogue and modeling process, the instructor encourages students to ask questions of both the text and strategies. The instructor uses this dialogue to foster both reading comprehension and strategic cognition. This general process of reading, dialoguing, and clarifying, continues throughout the length of the text. However, as students become more facile with the dialogue process and the reading comprehension strategies, the instructor begins to have students take the role of instructor or dialogue leader. As students begin to lead the dialogue process, the instructor assumes the role of guide or facilitator, rather than leader:

The instructor models and explains, relinquishing part of the task to novices only at the level each one is capable of negotiating at any one time. Increasingly, as the novice becomes more competent, the instructor increases her demands, requiring participation at a slightly more challenging level. (Palincsar & Brown, 1984, p. 13)

This shift from an instructor-centered approach to a student-centered approach is a central component of the reciprocal teaching process and encourages self-regulation on the part of the students.

### *Comprehension Strategies*

The use of comprehension strategies is one of three central pillars, along with dialogue and the appropriation of the role of instructor by the students, of the reciprocal teaching strategy. Comprehension strategies are organized approaches to engaging in and better understanding texts – to facilitate the creation of meaning during the reading process. Palincsar and Brown (1984), in their original research, used four discrete reading comprehension strategies within reciprocal teaching: questioning, summarizing, clarifying, and predicting.

1. *Questioning*: Questioning involves the identification of information, themes, and ideas that are central and important enough to warrant further consideration. The central or important information, themes, or ideas are used to generate questions that are then used as self-tests for the reader. Questioning provides a context for exploring the text more deeply and assuring the construction of meaning.
2. *Summarizing*: Summarizing is the process of identifying the important information, themes, and ideas within a text and integrating these into a clear and concise statement that communicates the essential meaning of the text. Summarizing may be based on a single paragraph, a section of text, or an entire passage. Summarizing provides the impetus to create a context for understanding the specifics of a text.
3. *Clarifying*: Clarifying involves the identification and clarification of unclear, difficult, or unfamiliar aspects of a text. These aspects may include awkward sentence or passage structure, unfamiliar vocabulary, unclear references, or obscure concepts. Clarifying provides the motivation to remediate confusion through re-reading, the use of context in which the text was written and/or read, and the use of external resources (e.g., dictionary or thesaurus).
4. *Predicting*: Predicting involves combining the reader's prior knowledge, new knowledge from the text, and the text's structure to create hypotheses related to the direction of the text and the author's intent in writing. Predicting provides an overall rationale for reading – to confirm or disconfirm self-generated hypotheses.

In Palincsar and Brown (1984), these four reading comprehension strategies were taught during the dialogue in which the instructor modeled the use of each of the strategies; however, others have successfully taught the reading comprehension strategies prior to engaging in the dialogue process (Palincsar, Brown, & Martin, 1987; Taylor & Frye, 1992).

### *Dialogue and Appropriation*

The aforementioned reading comprehension strategies alone are not sufficient to achieve the goals of reciprocal teaching. Dialogue is also a key component. Dialogue refers to the discussions, questions and answers, and feedback that occur during the process of reading and understanding the text (see Carter &

Fekete, 2001; Palinscar, 1986). During the early stages of reciprocal teaching the instructor explains, in small groups, the overall nature of the reading comprehension strategies, the reasons for their use, and when to use the strategies. The instructor then selects a section of the text and the instructor and students silently read that section. Typically, reciprocal teaching begins with the reading of short passages (e.g., a paragraph or two) and proceeds to longer passages (e.g., an entire section or text).

After reading a section of text the instructor begins to model the reciprocal teaching process by generating and asking a question which the students help to answer. The instructor may ask several questions before summarizing the section of text that was read. Following the summarization process, the instructor will clarify any difficult passages, vocabulary, or structures within the text. Finally, through the use of text-based cues, the instructor will provide a prediction for the next section of text. As the instructor progresses through questioning, summarizing, clarifying, and predicting, the students are not passive, but instead are encouraged to engage in discussion. Specifically,

students' participation can include (a) elaborating or commenting on another student's summary, (b) suggesting other questions, (c) commenting on another's predictions, (d) requesting clarification of material they did not understand, and (e) helping to resolve misunderstandings. (Rosenshine & Meister, 1994, p. 480)

This cycle of dialogical questioning, summarizing, clarifying, and predicting continue as an instructor-led process until students begin to understand the processes themselves. Gradually the instructor begins to transfer control of the process to the students by having students adopt the role of discussion leader. These leaders then initiate the dialogical questioning, summarizing, clarifying, and predicting process, while the instructor assumes the role of observer and facilitator.

It is at this point that the process of dialogue begins to flourish with one student asking a question and others providing answers and comments, one student summarizing and others providing elaborations and simplifications, one student identifying difficult passages and others clarifying and obtaining relevant resources, and one student predicting the upcoming text and others refining and provide alternative hypotheses. The use of this dialogue, in conjunction with the reading comprehension strategies, leads to the satisfaction of the previously identified goals of reciprocal teaching – for students to learn the reading comprehension strategies, learn how and when to use the strategies, and become self-regulated in the use of these strategies

(see Hart & Speece, 1998, and Rosenshine & Meister, 1994).

#### *Philosophical and Theoretical Foundations for the Use of Reciprocal Teaching*

The use of the reciprocal teaching strategy, including the achievement of the goals of reciprocal teaching, is well grounded in the literature on social constructivist philosophy and cognitive psychology theory. This grounding is essential as it separates the reciprocal teaching strategy from folk psychology strategies, and provides a robust rationale for its use.

Social constructivism, as a foundation for the use of reciprocal teaching, emphasizes the social genesis of knowledge; that is, "every function in the [student's] cultural development appears twice: first, on the social level, and later, on the individual level" (Vygotsky, 1978, p. 57). This social genesis of knowledge construction is comprised of three primary assumptions: (a) knowledge and meaning are active creations of socialization; (b) knowledge and meaning are social creations and as such reflect social negotiation and consensus; and (c) knowledge and meaning are constructed for the purposes of social adaptation, discourse, and goal achievement (Gergen, 1999; Prawat & Floden, 1994). These three assumptions are evident in reciprocal teaching; specifically, reciprocal teaching is based on active socialization, both instructor-student and student-student interactions, where the knowledge that is constructed from the given text is negotiated within discourse communities and is not merely transferred from instructor to student. In addition, reciprocal teaching emphasizes the instrumentalist supposition that knowledge is to be useful. That is, reciprocal teaching emphasizes the role of language in communication, understanding, and action.

While social constructivism provides a solid philosophical foundation for the use of reciprocal teaching, cognitive psychology provides a solid theoretical foundation. There is ample empirical evidence from cognitive psychology to suggest the usefulness of reciprocal teaching in fostering comprehension. Rosenshine and Meister (1994) conducted a meta-analysis of 16 quantitative studies focusing on reciprocal teaching and concluded that (a) reciprocal teaching had a significant positive effect on students' reading comprehension performance relative to instructor-made assessments (effect size = .88), and (b) reciprocal teaching had a significant and positive effect on students' reading comprehension performance relative to standardized tests (effect size = .32). Further, Rosenshine and Meister's analysis also revealed that reciprocal teaching is most effective for older and poorer reading students. These results bode well for the effective use of reciprocal teaching in higher education.

### *Variations on a Theme*

While the methodology delineated by Palincsar and Brown (1984) and Palincsar (1986) is well defined, three variations on this methodology have also been demonstrated to be effective. These variations include using different reading comprehension strategies, modeling to different sized groups, and teaching the reading comprehension strategies directly and at different times relative to the dialogue. The Miami-Dade County Public Schools' Project MERIT (Reciprocal teaching, n.d.) successfully added the strategy of visualizing to the Palincsar and Brown's original three strategies. In addition, De Corte, Verschaffel, and Van de Ven (2001) successfully modeled the reading comprehension strategies in front of the whole class, rather than in small groups. Finally, Palincsar, David, Winn, Stevens, and Brown (1990) successfully taught students the reading comprehension strategies before the dialogue process.

These variations on the Palincsar and Brown (1994) methodology are important as they demonstrate the flexibility and transferability of the reciprocal teaching strategy. The next section delineates how the authors of this article have effectively used the basic reciprocal teaching methodology within different contexts.

### Reciprocal Teaching in Action

#### *Case #1: Reciprocal Teaching and the Reading of Scholarly Articles (Peter Doolittle)*

In a graduate educational psychology class that is taught by the first author, Constructivism and Education, students are required to read philosophically and theoretically dense texts peppered with novel, polysyllabic, and multi-definitional words. Early in the semester, reading these types of texts is frustrating to the students, as they tend to lack the necessary prior knowledge of philosophy, constructivism, and educational psychology to unpack the text to the point of comprehension. To combat this frustration, a version of reciprocal teaching that is in general accord with the methodology proposed by Palincsar (1986) and Palincsar and Brown (1994) is used. The methodology for this augmented version of reciprocal teaching involves the same dialogic methodology used by Palincsar and Brown (i.e., a progression from instructor-centered to student-centered text inquiry), with a variation in the reading comprehension strategies used. These strategies are taught explicitly and modeled to the entire class, simultaneously, in a manner similar to that of Palincsar, David, Winn, Stevens, and Brown (1990). The modified reading comprehension strategies

employed for reading the dense philosophical and theoretical texts include summarizing, clarifying, integrating, and elaborating. The reading comprehension strategies of summarizing and clarifying have been defined previously and will not be reiterated here.

Integration, however, involves making explicit connections between (a) the new section of the text and the previously read sections of the same text, and (b) the new section of the text and previous readings (i.e., different texts). Thus, integration occurs both within the current text and between texts. Integration provides the catalyst to synthesize one's knowledge, in order to avoid inert knowledge and foster functional knowledge (Bransford & Vye, 1989). In addition to integration, students are to engage in elaboration. Elaboration involves explicitly relating the new section of the text to one's prior knowledge. Elaboration moves beyond relating the new text to previously read texts and includes making a broad array of connections to one's educational experiences, vocational experiences, and general knowledge of the world (see Dole, Duffy, Roehler, & Pearson, 1991). Specifically, elaboration leads to an enhanced personalization of the text and its meaning.

These four reading comprehension strategies - summarizing, clarifying, integrating, and elaborating - are implemented in the following manner. After reading a section of text, the lead student summarizes his or her current understanding of the text. The other students add to and/or comment on the lead student's summary as needed. The lead student then identifies sections of the text where clarification is needed. The lead student elicits the help of the other students in this process of clarification. The lead student then attempts to integrate the current section of text with the preceding sections of the same text. These connections are extended by other students before the lead student attempts to make connections between the current text and other relevant texts. After making inter- and intra-textual connections, the lead student guides a discussion that focuses on connecting the current text passage to the individual group member's prior knowledge. Finally, the reciprocal teaching cycle ends where it began, with the lead student summarizing the section of text just read.

This augmented reciprocal teaching methodology fosters meaningful learning where knowledge is integrated with other texts, one's prior knowledge, and others' perspectives. The use of this augmented reciprocal teaching methodology has resulted in students that are more adept at reading, interpreting, and comprehending difficult texts, as well as students that are better equipped to write more highly integrated papers.

*Case #2: Facilitating Historical Inquiry in the Social Studies (David Hicks)*

Teaching history to students who have simply experienced high school history via the traditional textbook is often a frustrating experience for both professor and students, especially when the time arrives to engage in historical inquiry. Wineburg's (1991) research on how students analyze multiple historical sources reveals that students approach historical sources as they would any narrative. The historical texts were viewed as nothing more than a "repository of facts." The dangers of such an approach to reading historical sources is that students simply accept what is written within the texts at face value and fail to recognize and take into account the importance of the historical context of which the source is a part.

Seixas (1998) contends that if students are to learn to read historical texts, instructors must be willing and able to teach students, explicitly, the metacognitive strategies and historical habits of mind required to engage in the process of historical inquiry. This is by no means an easy task but professors can facilitate the process of analyzing historical sources by guiding students through a process of asking spiraling questions designed to encourage students to go beyond a superficial glance at a source.

The process of teaching students how to analyze historical sources can be broken into five overlapping stages: Summarizing, Contextualizing, Inferencing, Monitoring, and Corroborating. Summarizing begins with having students quickly examine the documentary aspects of the text, by asking such basic questions as: What does the source directly tell us? Contextualizing begins the process of having students spend more time with the source in order to explore the authentic aspects of the text in terms of locating the source within time and space. Inferencing is designed to provide students with the opportunity to revisit initial facts gleaned from the source and begin to read subtexts and make inferences based upon their developing understanding of the context and continued examination of the source. Monitoring is a key stage in examining individual sources. Here students are expected to question and reflect upon their initial assumptions and process in terms of the overall focus on the historical question being studied. Corroborating only starts when students have analyzed a series of sources, and are ready to extend and deepen their analysis through comparing and contrasting the evidence gleaned from each source in light of the overall topic of investigation.

Within each stage, there exists a series of spiraling trigger questions that students should learn to ask as they initially begin to examine specific historical sources (see Figure 1). To help students learn how to

move through this process they are provided with the source analysis chart (see Figure 1). The chart can be used in a number of ways. Often students copy this chart onto full sized chart paper placed on the classroom wall. The students place, copy, or describe a source in the central Source Description box. Each subsequent layered box represents one of the specific stages of the analysis process. Students' answers to each stage's trigger questions are written within the corresponding box. However, telling students how to engage in this process of historical inquiry is not enough, instead the process is modeled for students using a think-aloud protocol – the instructor verbalizes his or her thoughts, unfiltered, as he or she works through an analysis. An example of this modeling process, and the subsequent progression from an instructor-centered analysis to a student-centered analysis, follows.

Consider the following question as a focus of historical analysis: How did World War II impact life in southwest Virginia? The historical analysis process begins by placing a text document focusing on price controls in the center box. Students are asked to listen to the types of questions asked by the instructor during the think-aloud, the responses generated, and the rationales for the questions and answers within each stage of analysis. A second example is also modeled using the think-aloud, a photograph from the same World War II period.

Following the completion of both think-aloud modeling protocols, students are asked to identify specific instructor based questions that aided in the analysis of these sources. Using these student generated questions, a third source from the period is placed within a new chart. This time the instructor guides the students through the process by asking them what questions they would ask of the source at each stage and discussing, refining, and writing up student responses on the chart. The goal is for the classroom exchange to shift from an instructor-led to a student-led discussion and analysis. Upon completion of the guided class analysis, students are divided into groups of three or four and each supplied with an historical source pertaining to the question under exploration. Students are then asked to analyze their source in the same way they have seen modeled and subsequently practiced in class.

The result is that the walls of the classroom are covered with historical sources that have been thoroughly interrogated by students as they explore a specific historical question. Each group presents their analysis of their source to the class. During the initial presentations, the instructor directs the students to take notice of the final stage of the analysis process – corroboration. Between presentations, the instructor, again using the think aloud protocol, begins to model

the process of corroboration between sources. As students begin to engage more fully in the corroboration process themselves, by comparing and contrasting evidence and identifying similarities and differences between the sources in light of the historical question being asked, the instructor begins to transfer ownership of the corroborating process to students.

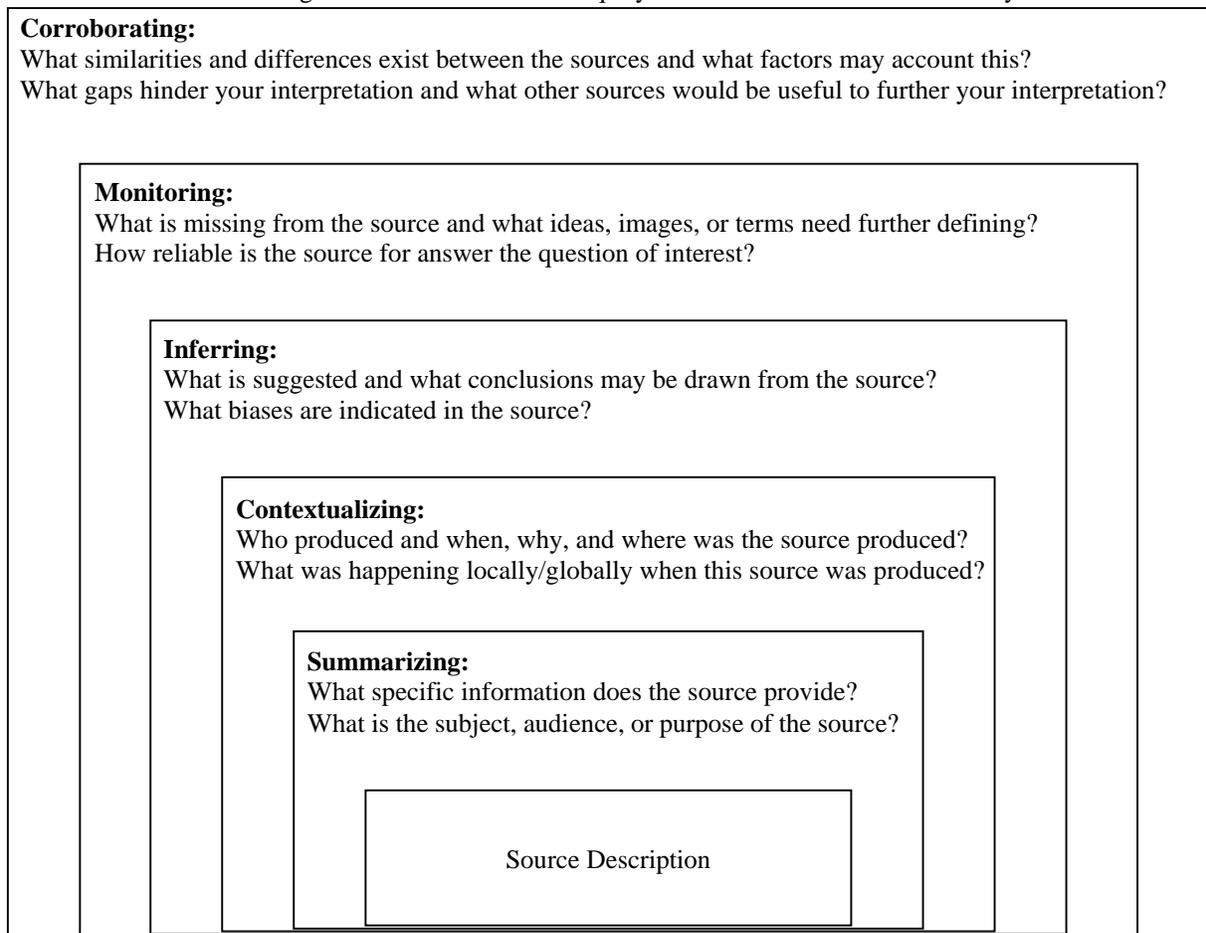
*Case #3: Thinking Before, During, and After Reading (Cheri Triplett)*

In my Theories and Practice in Content Literacy course, which is designed for preservice elementary school instructors; my students and I talk about comprehension and comprehension strategies on the first day of class. I am always dumbfounded by the students' stories of "reading the chapter and answering the questions at the end." At a time when we know so much about

improving comprehension, it is disappointing to hear that these are often the only instructions students receive about reading in the content areas. "In order to comprehend a text," I explain, "you must think before, during, and after reading." Reciprocal teaching is a strategy that can help students think and comprehend before, during, and after reading.

One of the paramount issues addressed in the literacy course is the content of the classroom textbooks. It is essential for the preservice instructors to critique the information they read in textbooks and trade books. It is equally essential for them to consult multiple sources when exploring a particular topic, especially in the area of history. Although school textbooks have been criticized for their minimalist views of history, they continue to be the genre of choice in the social studies classroom (Schug, Western, & Enochs, 1997).

FIGURE 1  
A Chart Designed to Foster Historical Inquiry Based on Historical Source Analysis.



In order to begin a discussion about the critical reading of history texts; we read a chapter about Abraham Lincoln from a classroom textbook; we read an award-winning children's book, *Lincoln, a Photobiography* (Freedman, 1987); and we read a critical essay about Lincoln from *Lies My Instructor Told Me* (Loewen, 1995). The purpose of reading these three texts sequentially is three-fold. First, I want to challenge the preservice instructors' assumptions by exposing them to three very different perspectives about Abraham Lincoln. Secondly, I want my students to be exposed to three very different genres that are appropriate for social studies instruction. Lastly, I want my students to learn to think before, during, and after reading.

The process of reciprocal teaching helps my students to think before, during, and after they read each text. The process I utilize introduces four specific comprehension strategies: activating prior knowledge, which takes place before the reading of text; questioning and clarifying, which takes place during the reading; and, summarizing, which takes place after the reading. For example, when we read the chapter about Abraham Lincoln from a classroom textbook, I usually lead in the process with the whole group as follows:

1. I lead a discussion about what they already know about Abraham Lincoln.
2. I have students read the chapter, recording their questions and comments as they go. These may include questions about vocabulary and text structure, as well as questions about Lincoln himself.
3. I lead a discussion about their questions and comments, clarifying new and challenging information.
4. I lead a discussion summarizing the article, emphasizing what they have learned.

By the time we read the chapter from *Lies My Instructor Told Me* (Loewen, 1995), students are able to lead themselves through this process in small groups, having a rich discussion about what they know, what has challenged their thinking, and what they have learned from reading. Ultimately, these preservice instructors are more likely to implement reciprocal teaching in their own classrooms because they have experienced the benefits of this process as learners.

*Case #4: Reciprocal Teaching and Technology for the Reading of Assigned Texts (Dee Nichols)*

Recent research into the uses of technology for instruction in assisting reading comprehension have

consisted of investigations in authentic classrooms, thus taking into account the dynamic factors that influence teaching and learning (Baumann, Dillon, Shockley, Alverman, & Reinking, 1996; Reinking, Labbo, & McKenna, 1997). In one of the reports, Reinking and associates generated a list of pedagogical generalizations intended to serve as a basis for using technology in improving reading comprehension. According to these generalizations, technology can promote the integration of reading and writing activities for purposeful communication, and can facilitate students' reading and writing by providing individualized assistance thus reducing the drudgery associated with some aspects of reading difficult text.

In addition to these studies examining the benefits of using technologically enhanced instruction, numerous pedagogically-oriented studies have demonstrated that students can be taught learning strategies and that these strategies in turn will improve students comprehension of difficult text (Dole, Brown, & Trathen, 1996; Paris, Wasik, & Turner, 1991). In addition, students who are taught these strategies not only comprehend the text, but they also arrive at a richer understanding of the text and are more likely to improve their abilities to use the strategies in other settings (Auerbach & Paxton, 1997; Pearson & Fielding, 1991).

Nichols, Wood and Rickelman (2001) in a recent examination of using technology to engage students, concluded that through the combination of technology and learning strategies, instructors can design instruction that allows students to work collaboratively, help students remain purposefully engaged in the learning task, and provide individual responses to all students. In light of this investigation, it has been my attempt to combine reciprocal teaching with technology through an online content area reading course, *Comprehending Processes and Reading in the Content Areas Online*.

Even though one of the generalizations of technology assisted instruction is that technology can create opportunities for purposeful communication, many students taking an online course often express lack of instructor involvement and feelings of isolation (Wolcott, 1996). Typically, in a traditional classroom, the instructor provides an opportunity to discuss the text assignments under their orchestrated movements, but during an online course, students' opportunities for discussion with others regarding the text can be limited without proper planning and intervention. In order to promote discussion regarding assigned readings and improving overall comprehension, I have attempted to combine reciprocal teaching with online threaded discussions and virtual classrooms.

Using a team-oriented approach, I assign chapters of the text to teams of learners. For example, I may break down the Vacca and Vacca (2002) Content Area Reading text into the following assignments: Team 1 is responsible for Chapter 1, Reading Matters; Team 2 is responsible for Chapter 2, Learning with Textbooks, Trade Books and Electronic Texts; and Team 3 is responsible for Chapter 3 Making Authentic Assessments. All students are responsible for reading all chapters, but the assigned teams are responsible for leading the discussion and utilizing comprehension strategies for their specific chapter. Once the chapters are assigned to teams of five, I then assign the rotating reciprocal teaching tasks to the team members. For example, Member 1 of the team is responsible for providing a summary of the chapter; Member 2 is responsible for clarifying confusing parts of the text and making connections between the text and personal experiences; Member 3 is responsible for generating questions from the chapter that they feel are key to the comprehension of the text and feel could be included on an exam; Member 4 is responsible for predicting the authors' intentions of the chapter and the rationale for the chapter; and Member 5 is responsible for designing some type of visual representation or graphic organizer for the chapter. While the graphic organizer component is not part of the comprehension strategies associated with reciprocal teaching (Palincsar & Brown, 1984), it is my addition to the reciprocal teaching model that I currently use. Once the individual team members have completed their tasks, I encourage them to meet in the virtual classroom, a modified chat room, to discuss the chapter and their individual assignments. They are responsible for making sure that each team member has each of the comprehension strategies associated with reciprocal teaching. Once each team has completed their assignment, they then post their chapter on the threaded discussion board where other students respond and interact as a continuation of the reciprocal teaching process.

After all of the teams have posted their reciprocal teaching components for the assigned chapters the other students are instructed to respond or reply to the team regarding the chapter. The expert team then, in essence teaches their chapter to the other learners in the class, thus promoting meaningful communication regarding the text and improving comprehension of text often viewed as cumbersome.

*Case #5: Theory Into Practice: Extending Comprehension (Carl Young)*

In my Teaching English in the Middle and Secondary Schools methods class, the course themes of language, literacy, and culture are explored in the context of the English language arts classroom and the

words and worlds of the students with whom we interact. Together, we explore what it means to be an instructor of literacy in the 21st Century. While practical aims of teaching are addressed, we also explore the symbiotic relationship between theory and practice in order to gain a sense of the continuum along which we can construct a vision of pedagogical theory capable of meeting the needs of all students.

As a part of our focus on better understanding the complexities of literacy, students read selections from Paulo Freire and Donaldo Macedo's *Literacy: Reading the Word and the World* (1987), a theoretical text that often proves difficult for many students. Part of what Freire and Macedo accomplish in their text is to provide a historical overview and critique of the traditional approaches to reading (e.g., academic, utilitarian, cognitive, and romantic). As an alternative, they advocate for a different approach, one characterized as a literacy of empowerment in which "educators should never allow the students' voice to be sacrificed, since it is the only means through which they make sense of their own experience in the world" (p. 152).

Getting students, most of whom are privileged, to see themselves as anything but an outsider to the language or the issues with which Freire and Macedo engage can be a challenge. If students remain outsiders to Freire's work on pedagogy and literacy, they miss one of his central messages – that one must remake Freire's language (e.g., words like critical literacy, oppression, dominant culture, liberatory pedagogy, etc.) in one's own particular context and that this has to happen before they can even begin to consider language instruction in more global contexts.

Making the transition from theory to practice is important, but it is not without complications. Consequently, I try to create practical applications to inspire student participation in the process of enacting critical literacy. Reciprocal teaching is a strategy that allows students to experiment with making the transition from theory to practice while extending their understanding of texts. The process I utilize in conjunction with reading the Freire and Macedo text involves a series of carefully constructed steps which aim to engage students in the theory and practice of critical literacy advocated by the authors while students simultaneously engage in specific comprehension strategies: activating prior knowledge; key word identification and definitions (during the reading process); summary rewritings (after reading the text); and keyword reflections (after class discussion and the creation of culture notebooks). To be more specific, the process usually follows along these lines:

1. Using their own schooling histories and previous course readings, students activate

prior knowledge by entertaining questions about and free writing on the concept of literacy, each developing a tentative definition for "literacy" before they read the text. As a part of this initial step, I model the creation of a schooling timeline and discuss how our histories might inform our perceptions of literacy.

2. With the above prewriting, students have created an immediate context for beginning to read and process Freire and Macedo's thoughts. Taking Freire's assertion that "reading always involves critical perception, interpretation, and rewriting of what is read" (p. 36) as a cue, we then attempt to put his suggestion into practice.

Difficult texts often pose challenges to the reader when the language employed has few reference points for the reader, either in their personal experience or in their vocabulary. One strategy for approaching such a text is to inquire into its vocabulary. If students can get a handle on the words that carry the essence of a text's meaning, the "keywords" that shape the narrative, then they can create shared points of reference to bring into discussions of the text.

After I introduce, discuss, and model the keyword strategy, students then are directed to make a list of what they perceive to be "keywords" in each chapter as they read. For each keyword, they are to write in their own words what they understand the authors to mean through their use of the word. After I model the approach with the initial chapter, students then complete chapter rewrites in which they rewrite the chapter in their own words as a means of critical summary.

3. With keywords and chapter rewrites in hand, we begin a discussion of the text and start to identify the larger body of keywords that we have in common. Here, students take on the role of identifying and categorizing the key vocabulary driving the text. Then they take this a step further using an adaptation of a methodology of Freire's called the "popular culture notebook" as a means of clarifying the text and its meaning. Students take on the role of lexicographer for specific keywords, meaning that they are responsible for providing additional insights into Freire's language by creating an engaging, informative, and dynamic keyword entry. In effect, students create their own shared course text or culture notebook comprised of keyword entries. These might include

investigations of word origins, illustrations of the word's use in the text and the world at large, explorations of figurative possibilities, relationships to other words (synonyms or antonyms), and meditations on its relevance to literacy, the teaching of literacy, and society in general. Prior to their beginning, I provide students with examples of keyword entries that serve as possible models.

4. Once compiled, copies of the class culture notebook are provided to students as an anthology of keyword entries. The culture notebook not only allows students the opportunity to learn from one another through their keyword entries but also through the use of the notebook as a working dialogical journal. In other words, students not only read the entries, but they also compose critical reflections on selected keyword entries—an additional means of meta-analysis while further developing critical reading and thinking skills. Thus, the keyword entries as well as the keyword entry critical reflections then become texts for students to share and discuss—a means to teach and to learn from one another while pushing for a greater critical awareness of their own life experiences.

In this case, reciprocal teaching takes the form of a process aimed at helping students to forge connections between theory and practice as they engage in the reading and analysis of a challenging text. Freire's choice of words can be viewed as a way of recording, investigating, and presenting problems of meaning in the area of literacy. While to understand the meaning of any given word is a step toward effective communication with others, our inquiry is ultimately about meanings being made with those words. By modeling critical reading and comprehension strategies for students (e.g., activating prior knowledge, keyword entries, chapter rewrites, culture notebooks, critical reflections, and dialogue) and then having them experiment with them, students realize that literacy is not about the isolated practice of using a dictionary. Instead, it is about garnering meaning from the context in which an author writes and developing a critical understanding of how the different words connect and interact with each other. Ultimately, reciprocal teaching, as employed here, is a way for readers to map the meaning of a specific text as they begin to seek their own meaning and, in doing so, come to discover connections between the word and the world they might not otherwise have thought existed.

### Conclusion

Reading comprehension is an essential component to higher education success; yet, reading comprehension instruction receives short shrift in higher education. This short shrift is not due to a lack of research in reading comprehension – there is a plethora of research regarding the teaching and learning of reading comprehension strategies, as well as the positive effects of these strategies, on comprehension and critical thinking (see Pearson & Felding, 1991; Tierney & Cunningham, 1984; Tierney & Readence, 2000). Unfortunately, as Anderson, Reder, & Simon (1998) have lamented, the "science of human learning has never had a large influence on the practice of education" (p. 227).

This lamentable situation can be easily changed through the conscious application of reading comprehension strategies in the higher education classroom. While there are many reading comprehension strategies available (see Tierney & Readence, 2000), the current article has focused on reciprocal teaching. Reciprocal teaching provides the higher education instructor with a useful tool for engaging students, individually and socially, in the exploration and critical evaluation of texts. In addition, the use of reciprocal teaching also satisfies the criteria for promoting effective strategy use. These criteria include the following:

1. Strategy instruction is effective when students learn a strategy within the contexts in which the strategy will eventually be employed, using contextually relevant tasks (Paris & Paris, 2001; Pressley, Harris, & Marks, 2001).
2. Strategy instruction is effective when a new strategy is practiced with a wide variety of tasks, in a wide variety of contexts, and on a continual basis (Brown & Palincsar, 1987; Mayer & Whittrock, 1996).
3. Strategy instruction is effective when students are provided scaffolding during early strategy use that is curtailed as students become more effective in their strategy use (Katayama & Robinson, 2000; Rogoff, 1990).
4. Strategy instruction is effective when instructors model effective strategy use for students, especially when this modeling takes the form of thinking aloud (Pressley, El-Dinary, Marks, Brown, & Stein, 1992; Pressley, Harris, & Marks, 1992).
5. Strategy instruction is effective when students understand why strategies are important and under what conditions specific

strategies are effective (Paris & Paris, 2001; Pressley, Borkowski, & Schnieder, 1987).

6. Strategy instruction is effective when students are taught to self-monitor and self-evaluate their own strategy use and strategy results (Belfiore & Hornyak, 1998; Zimmerman, Bonner, & Kovach, 1996).

Reciprocal teaching, when used appropriately, is a strategy that encompasses each of these effective strategy instruction criteria. In addition, the case examples previously discussed provide a broad range of text-based models of effective strategy use. Reciprocal teaching is a reading comprehension strategy that has withstood the tests of time, usage, and empirical research. Ultimately, reciprocal teaching provides a theoretically sound avenue for fostering the deeper understanding of texts within the higher education academic environment.

### References

- Anderson, J. R., Reder, L. M., & Simon, H. A. (1998). Radical constructivism and cognitive psychology. In D. Ravitch, (Ed.), *Brookings papers on educational policy: 1998* (pp. 227-255). Washington, D.C.: Brookings Institute.
- Auerbach, E. R., & Paxton, D. (1997). "It's not the English thing": Bringing reading research into the ESL classroom. *TESOL Quarterly*, 31 (2), 237-262.
- Baumann, J. F., Dillon, D. R., Shockley, B. B., Alverman, D. E., & Reinking, D. (1996). Perspectives in literacy research. In L. Baker, P. P. Afflerbach, & D. Reinking (Eds.), *Developing engaged readers in school and home communities* (pp. 217-246). Hillsdale, NJ: Erlbaum.
- Belfiore, P. J., & Hornyak, R. S. (1998). Operant theory and application to self-monitoring in adolescents. In D. H. Schunk & B. J. Zimmerman (Eds.), *Self-regulated learning: From teaching to self-reflective practice* (pp. 184-202). New York: Guilford Press.
- Bransford, J. D., & Vye, N. J. (1989). A perspective on cognitive research and its implications for instruction. In L. Resnick & L. Klopfer (Eds.), *Toward the thinking curriculum: Current cognitive research* (pp. 173-205). Alexandria, VA: Association for Supervision and Curriculum Development.
- Brown, A., & Palincsar A. (1987). Reciprocal teaching of comprehension strategies: A natural history of one program for enhancing learning. In J. Borkowski & J. D. (Day (Des.), *Cognition in special education: Comparative approaches to*

- retardation, learning disabilities, and giftedness* (pp. xx-xx). Norwood, NJ: Ablex.
- Brown, A., & Palincsar, A. (1989). Guided, cooperative learning and individual knowledge acquisition. In L. B. Resnick (Ed.), *Knowing, learning, and instruction: Essays in honor of Robert Glaser* (pp. 393-451). Hillsdale, NJ: Erlbaum.
- Butler, D. & Winne, P. (1995). *Feedback and self-regulated learning: A theoretical synthesis. Review of Educational Research, 65*, 245-281.
- Carpenter, P., & Just, M. (1986). Cognitive processes in reading. In J. Orasanu (Ed.), *Reading comprehension: from research to practice*. Hillsdale, NJ: Erlbaum.
- Carter, C., & Fekete, D. (2001). *Reciprocal teaching: The application of a reading improvement strategy on urban students in Highland Park, Michigan, 1993-95* [Innodata Monographs - 8]. Geneva, Switzerland: International Bureau of Education.
- De Corte, E., Verschaffel, L., & Van de Ven, A. (2001). Improving reading comprehension strategies in upper primary school children: A design experiment. *British Journal of Educational Psychology, 71*, 531-559.
- Dole, J. A., Brown, K. J., & Trathen, W. (1996). The effects of strategy instruction on the comprehension performance of at-risk students. *Reading Research Quarterly, 31*(1), 62-88.
- Dole, J., Duffy, G., Roehler, L., & Pearson, P. (1991). Moving from the old to the new: Research on reading comprehension instruction. *Review of Educational Research, 61*, 239-264.
- Freedman, R. (1987). *Lincoln: A photobiography*. Boston: Houghton Mifflin Company
- Freire, Paulo & Macedo, Donaldo. (1987). *Literacy: Reading the Word and the World*. South Hadley, Mass: Bergin & Garvey Publishers, Inc.
- Gergen, K. (1999). *An introduction to social construction*. Boston: Sage.
- Hart, E. & Speece, D. (1998). Reciprocal teaching goes to college: Effects for postsecondary students at risk for academic failure. *Journal of Educational Psychology, 90*(4), 670-681.
- Hattie, J., Briggs, J., & Purdie, N. (1996). Effects of learning skills interventions on student learning: A meta-analysis. *Review of Educational Research, 66*, 99-136.
- Hodge, E., Palmer, B., & Scott, D. (1992). Metacognitive training in cooperative groups on the reading comprehension and vocabulary of at-risk college students. *College Student Journal, 26*, 440-448.
- Katayama, A. D., & Robinson, D. H. (2000). Getting students "partially" involved in note-taking using graphic organizers. *Journal of Experimental Education, 68*, 119-133.
- Loewen, J. (1995). *Lies My Teacher Told Me*. New York: Touchstone.
- Mayer, R. (1996). Learning strategies for making sense out of expository text: The SOI model for guiding three cognitive processes in knowledge construction. *Educational Psychology Review, 8*, 357-371.
- Mayer, R. E., & Whittrock, M. C. (1996). Problem-solving transfer. In D. C. Berliner & R. C. Calfee (Eds.), *Handbook of educational psychology* (pp. 47-62). New York: Macmillan.
- McCarty L. P., & Schwandt, T. A. (2000). Seductive illusions: Von Glasersfeld and Gergen on epistemology and education. In D. C. Phillips (Ed.), *Constructivism in education: Opinions and second opinions on controversial issues* (pp. 41-85). Chicago, IL: National Society for the Study of Education.
- Meyer, B. J., Young, C. J., & Barlett, B. J. (1989). *Memory improved Reading and memory enhancement across the life span through strategic text structures*. Hillsdale, NJ: Erlbaum.
- Nichols, W. D., Wood, K. D., & Rickelman, R. (2001). Using technology to engage students in reading and writing. *Middle School Journal, 45*-50.
- Palincsar, A. (1986). The role of dialogue in providing scaffolded instruction. *Educational Psychologist, 21*, 73-98.
- Palincsar, A., & Brown, A. (1984). Reciprocal teaching of comprehension-fostering and comprehension-monitoring activities. *Cognition and Instruction, 2*, 117-175.
- Palincsar, A., Brown, A., & Martin, S. (1987). Peer interaction in reading comprehension instruction. *Educational Psychologist, 22*, 231-253.
- Palincsar, A., David, Y., Winn, J., Stevens, D., & Brown, A. (1990, April). *Examining the differential effects of instructor versus student controlled activity in comprehension instruction*. Paper presented at the annual meeting of the American Educational Research Association, Boston.
- Palmer, D., & Goetz, E. (1988). Selection and use of study strategies: The role of the studier's beliefs about self and strategies. In C. Weinstein, E. Goetz, & P. Alexander (Eds.), *Learning and study strategies: Issues in assessment, instruction, and evaluation* (pp. 41-61). San Diego, CA: Academic Press.
- Paris, S. G., & Paris, A. H. (2001). Classroom application of research oh self-regulated learning. *Education Psychologist, 36*, 89-101.
- Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategic readers. In R. Barr, M. Kamil, P. Mosenthal, & D. Pearson (Eds.),

- Handbook of reading research, Volume II* (pp. 609-640). White Plains, NY: Longman.
- Pearson, P., & Fielding, L. (1991). Comprehension instruction. In R. Barr, M. Kamil, P. Mosenthal, & D. Pearson (Eds.), *Handbook of reading research, Volume II* (pp. 815-860). White Plains, NY: Longman.
- Phillips, D. C. (Ed). (2000). *Constructivism in education: Opinions and second opinions on controversial issues*. Chicago, IL: National Society for the Study of Education.
- Prawat, R. S. (1996). Constructivisms, modern and postmodern. *Educational Psychologist, 31*(3/4), 215-225.
- Prawat, R. S., & Floden, R. E. (1994). Philosophical perspectives on constructivist views of learning. *Educational Psychologist, 29*(1), 37-48.
- Pressley, M., Borkowski, J. G., & Schneider, W. (1987). Cognitive strategies: Good strategy users coordinate metacognition and knowledge. In R. Vasta & G. Whitehurst (Eds.) *Annals of child development* (Vol. 5) (pp. 89-129). New York: JAI Press.
- Pressley, M., El-Dinary, P. B., Marks, M. B., Brown, R., & Stein, S. (1992). Good strategy instruction is motivating and interesting. In K. A. Renninger, S. Hidi, & A. Krapp (Eds.), *The role of interest in learning and development* (pp. 239-254). Hillsdale, NJ: Erlbaum.
- Pressley, M., Harris, K. R., Marks, M. B. (1992). But good strategy instructors are constructivist! *Educational Psychology Review, 4*, 3-31.
- Pressley, M., Woloshyn, V., Lysynchuk, L., Martin, V., Wood, E., & Willoughby, T. (1990). A primer of research on cognitive strategy instruction: The important issues and how to address them. *Educational Psychology Review, 2*, 1-58.
- Reciprocal teaching* (n.d.) Retrieved August, 15, 2002, from Miami-Dade County Public Schools [http://www.dade.k12.fl.us/pers/prodev/reciprocal\\_teaching.htm](http://www.dade.k12.fl.us/pers/prodev/reciprocal_teaching.htm)
- Reinking, D., Labbo, L., & McKenna, M. (1997). Navigating the changing landscape of literacy: Current theory and research in computer-based reading and writing. In J. Flood, S. B. Heath, & D. Lapp (Eds.), *Handbook of research on teaching literacy through the communicative and visual arts*. New York: Simon & Schuster Macmillan.
- Rogoff, B. (1990). *Apprenticeship in thinking: Cognitive development in social context*. New York: Oxford University Press.
- Rosenshine, B., & Meister, C. (1994). Reciprocal teaching: A review of the research. *Review of Educational Research, 64*(4), 479-530.
- Rosenshine, B., Meister, C., & Chapman, S. (1996). Teaching students to generate questions: A review of the intervention studies. *Review of Educational Research, 66*, 181-221
- Royse, D. (2001). *Teaching tips for college and university instructors: A practical guide*. Boston: Allyn and Bacon.
- Schug, M. C., Western, R. D., & Enochs, L. G. (1997). Why do social studies teachers use textbooks? The answer may lay in economic theory. *Social Education, 61*(2), 97-101
- Seixas, P. (1998) Student instructor thinking historically. *Theory and Research in Social Education, 26*(3): 310-341.
- Taylor, B., & Frye, G. (1992). Comprehension strategy instruction in the intermediate grades. *Reading Research and Instruction, 92*, 39-48.
- Tierney, R. J., & Cunningham, J. (1984). Research on teaching reading comprehension. In P.E. Pearson (Ed.), *Handbook of reading research* (pp. 609-656). New York: Longman.
- Tierney, R. J., & Readence, J. E. (2000). *Reading strategies and practices: A Compendium*. Boston: Allyn and Bacon.
- Van Meter, P., Yokoi, L., & Pressley, M. (1994). College students' theory of notetaking derived from their perceptions of notetaking. *Journal of Educational Psychology, 86*, 323-338.
- Vacca, R. T., & Vacca, J. L. (2002). *Content area reading: Literacy and learning across the curriculum*. Boston, MA: Allyn & Bacon.
- Vygotsky, L. S. (1978). *Mind in society: The development of higher psychological processes*. Cambridge, MA: Harvard University Press.
- Wilson, J. (1988). Implications of learning strategy research and training: What is has to say to the practitioner. In C. Weinstein, E. Goetz, & P. Alexander (Eds.), *Learning and study strategies: Issues in assessment, instruction, and evaluation* (pp. 323-331). San Diego, CA: Academic Press.
- Wineburg, S. (1991) On the reading of historical texts: Notes on the breach between school and academy. *American Educational Research Journal, 28*: 495-519
- Wolcott, L. (1996). Distanced but not distanced a learner-centered approach to distance education. *Techtrends, 41*(7), 23-27.
- Zimmerman, B. J., Bonner, S., & Kovach, R. (1996). *Developing self-regulated learners: Beyond achievement to self-efficacy*. Washington, DC: American Psychological Association.

PETER DOOLITTLE is an associate professor of educational psychology within the Department of Learning Sciences and Technology in the School of Education at Virginia Tech. He is Director of the Educational Psychology Research Program at Virginia Tech and his research focus includes the investigation of the development of cognitive and metacognitive strategies within multimedia environments. His academic background includes 17 years teaching K-12, undergraduate, and graduate students, in public schools and private schools, using traditional and online formats, across several subject areas including mathematics, computer science, statistics, and educational psychology. He can be contacted at 305 War Memorial Hall (0313), Virginia Tech, Blacksburg, VA 24061. E-mail: pdoo@vt.edu.

DAVID HICKS is an associate professor of social studies education in the Department of Teaching and Learning at Virginia Tech. He serves as the co-editor of the social studies current issues section of *Contemporary Issues in Technology and Teacher Education*. David's publications have appeared in *Social Education*, *The Mathematics Teacher*, *Contemporary Issues in Technology and Teacher Education*, *Teachers College Record*, *Theory and Research in Social Education* and the *International Journal of Social Education*. Currently he is investigating how concepts of citizenship and the integration of technology can influence how teachers approach the teaching and learning of history and social science. He can be contacted at 313 War Memorial Hall (0313), Virginia Tech, Blacksburg, VA 24061. E-mail: hicks@vt.edu.

CHERI F. TRIPLETT is an assistant professor in the Elementary Education Program at Virginia Tech. She teaches a range of literacy courses for pre-service, graduate, and doctoral students. Her research interests include the emotional lives of children at school and the emotional issues of students identified as "struggling readers." She can be contacted at 318 War Memorial Hall (0313), Virginia Tech, Blacksburg, VA 24061. E-mail: ctriplet@vt.edu.

WILLIAM DEE NICHOLS is an associate professor in the Department of Reading and Elementary Education at the University of North Carolina at Charlotte. He teaches undergraduate and graduate courses in the areas of literacy development, literacy teaching methods and strategies, reading diagnosis and young adult literature. His research interests include vocabulary instruction and reading comprehension with particular interest in professional development in these areas. He is also interested in the early stages of reading development. He can be contacted at 388 College of Education, Department of Reading and Elementary Education, UNCC, 9201 University City Boulevard, Charlotte, NC 28223-0001. E-mail: wdnichol@email.uncc.edu .

CARL A. YOUNG, a former middle and high school English language arts teacher, is an assistant professor of English Education and the program advisor for the MAED Licensure Program in English Education within the Department of Teaching and Learning in the School of Education at Virginia Tech. He also serves as the Vice-President for the Virginia Association of Teachers of English (VATE) and as lead editor of the English language arts strand of *Contemporary Issues in Technology and Teacher Education* (<http://www.citejournal.org> ). Dr. Young teaches courses in secondary English methods and teaching composition, and he conducts research on content area reading and writing strategies. His research interests also include teaching English in rural and inner-city schools, making the transition from preservice to inservice English teacher, responding effectively to student writing, and integrating critical literacy, technology, and inquiry-based applications into the English language arts classroom. He can be contacted at 310 War Memorial Hall (0313), Virginia Tech, Blacksburg, VA 24061. E-mail: cay@vt.edu.