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Abstract

Complete issue of Reading Horizons volume 49, issue 1.
Untapped Cultural Support: The Influence of Culturally Bound Prior Knowledge on Comprehension Performance
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Reading the Past: Historical Antecedents to Contemporary Reading Methods and Materials
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University of Kansas

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The Ohio State University at Marion

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Geneva College

Going Green: Books that Invite Wonder and Action about Earth’s Endangered Environment
Terrell A. Young, Ed.D. and Barbara A. Ward, Ph.D.
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Untapped Cultural Support: The Influence of Culturally Bound Prior Knowledge on Comprehension Performance
Ruanda Garth-McCullough ................................................................. 1-30

Reading the Past: Historical Antecedents to Contemporary Reading Methods and Materials
Arlene L. Barry ...................................................................................... 31-52

An Exploration of University Students’ Spelling Abilities
Mary Jo Fresch ...................................................................................... 53-70

Students’ Perceptions of “Fun” Suggest Possibilities for Literacy Learning: “You Can Be Entertained and Informed”
Brandi Gribble Mathers ........................................................................ 71-88

Going Green: Books that Invite Wonder and Action about Earth’s Endangered Environment
Terrell A. Young and Barbara A. Ward .................................................. 89-100
From the Editor

Change can be interesting. Many times, it is difficult, time consuming, and stressful. It can also be exciting and fulfilling. I remember, when I was a middle school teacher, the beginning of each school year anticipating new students with all the requisite challenges we would face together: the transition into a new year, facing the unknown together. So many possibilities, so many changes.

Life is fraught with change. Here in Michigan, we are experiencing the annual change of color as trees burst into flaming red, bright orange, and intense gold. Temperatures drop, flowers freeze, and leaves fall. As with the seasons, change is also inevitable. Many people have shared words of wisdom about it, from the profound as Mahatma Gandhi said, “You must be the change you want to see in the world,” to the more humorous, “Change is inevitable—except from a vending machine,” Robert C. Gallagher.

*Reading Horizons* is changing. Volume 49 brings with it a new design and an updated website. You will notice that the cover and the format of the journal has changed with the authors and articles listed on the cover to highlight the outstanding researchers featured in each issue. We’ve also moved some of the front matter to the back. I encourage you to check out the website http://www.wmich.edu/coe/spls/clinic/readhorizons.htm as you will see updated versions of the manuscript submission guidelines, our Editorial Advisory Board, and links to sample articles from Volume 48. Speaking of the advisory board, I want to welcome ten new members all of whom are a welcome change to the *Reading Horizons* family. Although changes are being made, the high quality of the writing and research will remain a constant.

In this issue, authors present the need for change as we think about literacy in its many forms. Ruanda Garth-McCullough challenges us to consider the importance of culturally bound prior knowledge when teaching reading. What is involved in comprehension? How can we improve the comprehension of our African American students? How often do we provide texts from other cultures? Dr. Garth-McCullough’s study of the influence of culturally bound texts on the reading comprehension of African American students asks us to change our thinking about the texts we read in our classrooms. Mary Jo Fresch tackles the issue of spelling in an oft ignored population—undergraduate pre-service education majors. Spelling is more frequently thought of as a topic for elementary students but how do adults think about their spelling
ability? Dr. Fresch researched the spelling patterns of this population and addresses the low self-efficacy many face when their spelling is poor.

Arlene Barry researched how literacy teaching has changed through the years. Her article takes us on a journey into the past as she describes the early hornbook and Primers that were used to teach the children of early colonists. From the earliest days when reading instruction included lessons in morality and Puritan thought to the “Reading Wars,” Dr. Barry traces the many changes that have affected literacy learning and teaching. Brandi Mathers asks us to reconsider the concept of fun in our literacy lessons. What do young students think of reading and writing? As Dr. Mathers’ discovered, many think it’s either fun or boring. She challenges us to rethink our understanding of the word “fun.” Is the concept of “fun” something we can include in our thinking or is it to be relegated to the playgrounds and Xboxes of the world? Can we consider the possibility of having “hard fun” in our classrooms? Are we open to changing our idea of fun while learning?

Terrell Young and Barbara Ward challenge us to rethink our very world as they present us with Green Books—texts that encourage us to care for the earth. From early elementary through high school, these books invite the reader to enjoy and appreciate our world while asking us to change the way we think and behave in order to preserve the beauty around us.

Change is indeed a challenge. The only certainty is that change will come so we might as well embrace it. Remember, as Price Pritchett once said, “Change always comes bearing gifts.” It is my hope that this, and future issues of Reading Horizons, will be seen as gifts to help you think about your own theory and practice and, ultimately encourage you to consider change.

Allison L. Baer, Editor
Reading Horizons
Kalamazoo, MI

There is no more crucial or basic skill in all of education than reading.
Reading Horizons

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Untapped Cultural Support: The Influence of Culturally Bound Prior Knowledge on Comprehension Performance

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Abstract
By analyzing the prior knowledge of African American students, this study explored the relationship between cultural orientation of literature and reading comprehension to determine its’ effect on low, mid, and high level readers. Over one hundred 8th grade students from four different public schools read short stories from three different cultural orientations. Their reading comprehension performance was analyzed to determine the role that culturally-bound prior knowledge plays in the comprehension process for low, medium, and high performing students. To measure the effects of cultural orientation of texts, prior achievement, and prior knowledge on the students’ reading comprehension performance, the study utilized the Rasch model and ANOVA. The data revealed a high level of culturally-bound prior knowledge supports students’ reading comprehension. Cultural support was especially important to readers at the mid range achievement level.

The average African American or Latino student achieves at the same level as the average white student in the lowest quartile (Weiss, 2003). Underperformance of African American students has been debated and analyzed from many perspectives, and the issues remain unsettled. Arguments centered on African Americans’ achievement often blame students, their families, communities, and socioeconomic factors for this assumed lack of ability, interest, and motivation. Studies frequently cite underperformance as the problem when in fact it is only one of many symptoms (Burns, Keyes, & Kusimo, 2005; Gay, 2000; Ladson-Billings, 2006).
In order to lower obstacles to achievement, educators must better identify the learning process variables in the classroom that either interfere with or promote students’ performance. Social and linguistic experiences are particularly fruitful processes because they influence students’ access to and comprehension of curricula (Cazden, John, & Hymes, 1972; Gee, 1989, 2004; McCollin & O’Shea, 2005; Wertsch, 1991). Investigating within-group variability in literacy achievement, often masked in performance averages across ethnic groups, could bring us closer to practical information on the social experiences and linguistic background that affect achievement (Gay, 2000). Effective use of the shared experiences that students within the same ethnic groups bring to the classroom can be used as a basis for efficient adaptations to curriculum and instructional strategies in ways that can enhance performance.

By analyzing the prior knowledge of an economically and academically diverse group of African American students, this study explores the relation between cultural orientation of literature and student reading comprehension among low, mid, and high level readers. In literacy instruction, the content of the texts often conveys cultural orientation through language, values, practices, beliefs, and styles that are specific to a cultural group or subgroup. The present study explores this relationship between the cultural schema embedded in literary narratives and reading comprehension performance. In particular, the study analyzes aspects of reading comprehension to determine how culture affects literacy acquisition during adolescence. Although prior research investigated national or international cross-cultural samples (Steffensen, Joeg-Dev, & Andersen, 1979), this study focuses on within-group differences in an African American sample. This approach provides an opportunity to highlight distinctions between students at various achievement levels. Ultimately, the findings further our understanding of what role social and cultural factors play in cognitive processes.

This research extends the work conducted in the 1970s and 1980s by the Center for the Study of Reading at the University of Illinois at Urbana-Champaign on prior knowledge, schema, and reading comprehension. It does so first by including multicultural literature and using authentic texts with a racial subgroup (Freebody & Anderson, 1981; Hall & Guthrie, 1979; Johnston & Pearson, 1982; Linn, Levine, & Hastings, 1980; Pearson & Raphael, 1989; Pearson, Roehler, Dole, & Duffy, 1999; Reynolds, Taylor, Steffensen, Shirey, & Anderson, 1981). This study also extends the Center’s work by using a classroom setting and typical texts as opposed to the more “bizarre” or “ambiguous” texts used in the laboratory studies (Carver, 1992; McVee, Dunsmore, & Gavelek, 2005; Sadoski, Paivio, & Goetz, 1991). Viewing schemas as tools that are embodied in sociocultural context in ways that mediate students’ understanding and learning, this investigation of culturally bound prior
knowledge is defined as prior knowledge that is derived from social practices of a particular community group, recognizing the connection between cognitive science and situated practices (McVee et al., 2005; Wertsch, 1991; Wertsch & Bivens, 1992).

In line with the more recent call made by McVee et al., (2005) to revisit schema theory, this research places social and cultural features in the foreground in the discussion of schema. Like the work of others (Alvarez, 1990; Anderson, 1994; Anderson & Pearson, 1984; Bransford, 1994; Norris & Phillips, 1987; Reynolds et al., 1981; Rumelhart, 1975; Tierney & Pearson, 1986), this research also views schema as a powerful tool that teacher and teacher educators use to understand students’ reading comprehension. It extends earlier investigations that demonstrated the connection between prior knowledge and reading comprehension by identifying a sociocultural aspect in the relationship among a group of African American students in large urban public schools (Foertsch, 1989; Johnston, 1984; Johnston & Pearson, 1982; Maria & MacGinitie, 1981). The quantitative data provide the opportunity to explore whether the established relationship between prior knowledge and reading comprehension transfers to students’ knowledge of the cultural information in the text. Similar to Anderson’s (1994) study of black and white teenagers’ perceptions of “sounding,” this study also explores the students knowledge of the community-based practices embedded in the texts.

In an era dominated by the No Child Left Behind act, mid-performing students risk getting lost in the shuffle since high stakes testing frequently forces schools to focus resources on lower performing students. However, as this article suggests, given the improved performance of students when they interact with text based in a familiar cultural context, multicultural texts can be an effective tool in boosting literacy achievement for all students, including lower-income mid-performers. Such an approach may capitalize on the opportunities to enhance talent amongst students that are in jeopardy of being under-nurtured in the current educational climate.

**Related Literature**

To say that the American educational system was not constructed with African American experiences in mind would be a gross understatement. American schools, their academic activities, structures, and materials primarily reflect social, historical and cultural traditions of a white, middle-class mainstream. It has been argued that students whose experiences do not relate to the cultural norms reinforced in most American classrooms are at an academic disadvantage (Lane, 2006). The practices that require students to “check their bodies at the schoolroom door” have proven ineffective (Gee, 2004, p. 39).
Literacy instruction is a clear example of content that often conveys cultural orientation through language, values, meaning, beliefs, style rituals, and preference. Just like schools and classrooms, texts are culturally loaded (McVee et al., 2005). Frequently, the role that prior knowledge plays in text comprehension has received less attention than other strategies for improving comprehension. For example, Armbruster, Lehr, and Osborn’s (2003) book, *Put Reading First: The Research Building Blocks for Teaching Children to Read* recommends six strategies grounded in science for improving text comprehension: monitoring comprehension; using graphic and semantic organizers; answering questions; generating questions; recognizing story structure; and summarizing. It only secondarily mentions using prior knowledge in the classroom as a means of supporting literacy. *Put Reading First* (2003) is listed on the National Reading Panel website, which was developed by the Center for the Improvement of Early Reading Achievement (CIERA) and funded by the National Institute for Literacy (NIFL) (Armbruster et al., 2003).

Previous research has identified sociocultural factors as influential in the processes, content, interactions and perceptions of the classroom (Banks, 1995a; Banks, 1995b; Pai & Adler, 1997; Ruddell, 1994; Ruddell, Ruddell, & Singer, 1994). Research in the areas of multicultural education, cognition, educational anthropology, and cultural psychology have also explored whether sociocultural factors influence various aspects of the educational process. Other studies demonstrate the importance of cultural synchronization, modeling, and relevance in learning situations (Allen & Boykin, 1992; Aoki, 1993; Au & Jordan, 1977; Banks & Banks, 1995; Boykin, 1984; Gay, 2000; Jordan Irvine, 1990; King, 1995; Ladson-Billings, 1994, 1995a, 1995b; Lee, 1992, 1993; Mehan, Lintz, Okamoto, & Wills, 1995; Minami & Ovando, 1995; Nieto, 1999; Pai & Adler, 1997; Pewewardy, 1994; Wyngaard, 1999; Yokota, 1998).

While related research offers theoretical support for incorporating students’ cultural experiences into the classroom, there is a dearth of empirical studies examining the effects of using culturally relevant materials on student achievement (Howard, 2003; Ladson-Billings, 1995b). Casteel’s (1997) study of seventh graders is one of the few and is closely aligned with the objectives and design of this current investigation. Casteel (1997) found that African American students’ comprehension scores were higher when the students read passages from a basal that featured white protagonists rather than passages featuring African American characters. The students indicated that the passages depicting African Americans set the characters in a negative light and were boring, which was a likely shortcoming of the study design. The study also did not include an assessment of the cultural load of the text. Culture load refers to the “amount of cultural knowledge required but never explicitly explained in order for the learner to accurately comprehend the meanings
of a text” (Meyer, 2000, p. 230). This current study offers a more nuanced empirical approach to examining the effects of cultural knowledge and comprehension.

Reading comprehension offers an appropriate measurable outcome variable for this study because sociocultural influences are believed to affect the comprehension process (Foertsch, 1989; Ruddell et al., 1994). Traditional research on reading has often focused on the psychological processes of the individual. More recent research views comprehension as the construction of the meaning of written communication that results from an exchange of ideas between the interpreter and the content in a specific communicative context (Harris & Hodges, 1995). This process involves the social, cultural, and historical experiences of the reader with the information provided in the text. It is believed that when the intended message relates to readers’ experiences, they are better able to invoke background knowledge to construct the intended meaning. For this study, students’ prior knowledge of text content—specifically, culturally bound prior knowledge—is explored to assess its effect on comprehension.

In its most general form, the operating premise of this study is that culture influences knowledge, beliefs, and values, and that knowledge, beliefs, and values influence comprehension processes. If, when reading, students have access to tools that they develop in other sociocultural contexts, their comprehension will increase. In their reading of culturally relevant text, access to culturally bound prior knowledge should increase their comprehension performance because it will enable them to draw on their own experiences as a frame of reference for understanding the context and details of the story.

**Theoretical Framework: The Tool Kit Analogy**

The perspective of the current study is framed by Wertsch’s (1991) *Tool Kit Analogy*, which melds Vygotsky (Bakhtin, 1986; Todorov, 1998; Vygotsky, 1981, 1978; Wertsch, 1991) and Bakhtin’s (1986) research. From Wertsch’s (1991) view, prior knowledge and language are socially, historically, and culturally constructed tools that readers use to comprehend text. The tool kit analogy posits that individuals use the tools they have available to them, such as language and prior knowledge, to construct meaning and that tools, whether classified as technical (computer) or psychological (sign systems such as human language), play a role in mediating human action (Bakhtin, 1986; Todorov, 1998; Vygotsky, 1981, 1978; Wertsch, 1991). Wertsch (1991) drew heavily on Vygotsky’s (1978) theory, which asserted that individuals derive higher mental functioning (thinking, voluntary attention, and logical memory) from their social life. Vygotsky’s (1978) theory, which also declares that tools and signs mediate human action on social and individual planes, aids the
investigation of students’ use of their sociocultural experiences to interpret and comprehend written text.

Bakhtin’s theory of dialogicality provided the tool kit analogy a focus on the bi-directional relationship between the text and what readers bring with them while interacting with the text (Todorov, 1998). Wertsch’s (1991) tool kit analogy contends that mediational means, such as prior knowledge, not only shape action in essential ways, but also “emerge in response to a wide range of social forces” (p. 34). Thus, students’ sociocultural experiences outside of school impact the mediational means they have access to when involved in literacy tasks. The framework provided in the tool kit analogy assists educators in viewing what students bring from their general and cultural out-of-school experiences as tools rather than deficits. This in turn enhances learning outcomes. Wertsch’s (1991) theory presents a set of concepts that provide a useful framework for this investigation of prior knowledge as a mediational tool that students employ during the reading comprehension process. Wertsch’s discussion of mediational tools helps to further unpack the factors that could influence a student’s reading comprehension.

**Definitions of Key Concepts in the Study**

**Reading Comprehension**

For the purposes of this study, comprehension is defined as, “a process in which the reader constructs meaning while, or after, interacting with text through the combination of prior knowledge and previous experience, information in text, the stance he or she takes in relationship to the text, and immediate, remembered, or anticipated social interactions and communication” (Ruddell, 1994, p. 415). This definition, based on schema, transactional, and sociocultural theoretical perspectives of the reading process, emphasizes reading comprehension as a complex process (Beck & McKeown, 1999). The complexity of this process involves interacting subprocesses that “require decoding accuracy and fluency, access to meanings of the vocabulary used and to background knowledge relevant to the content, and active engagement with the text” (Beck & McKeown, 1999, p. 197). The theoretical framework used in this study acknowledges the contextual and dialogical nature of reading comprehension as a meaning making activity. Readers’ strategies, background, vocabulary, and metacognitive knowledge play a critical role in an interactive model of reading (Pearson & Raphael, 1989). According to Ruddell’s (1994) definition, when readers can invoke their schemata, or conceptual frameworks, the meaning of the words they already know, their relationship with the text, and previous social interactions involving the word, they are able to understand or comprehend. The
argument driving this study is that when readers interact with literature that relates to their culture-specific experiences, their reading comprehension performance will improve. This improvement should occur because culturally relevant texts allow readers to access their cultural knowledge or culture-specific prior knowledge as a psychological tool to understand the intended meaning of the text.

**Prior Knowledge**

Information already available in the brain is an important factor in determining how readers process the information available in written text (Feeley, Wepner, & Willing, 1985). Anderson and Freebody (1981) demonstrated the importance of prior knowledge and previous experience in the reading process. For example, consider that a person who knows the word *jibed* is likely to have knowledge of sailing that enables him or her to construct meaning while reading the following sentence: *We jibed suddenly and the boom snapped across the cockpit.* Students who had no knowledge of sailing and were asked to read that sentence would be operating without sufficient prior knowledge and thus would be at a disadvantage.

Chiesi, Spilich, and Voss (1979) found that subjects with high knowledge about baseball recalled more significant information from a text about baseball than low-knowledge readers. This same effect was found with subjects from different religious backgrounds who read passages about particular religious ceremonies (Lipson, 1983). As the examples above indicate, the relationship between prior knowledge of content and comprehension has been positively correlated (Anderson & Freebody, 1981; Bransford & Johnson, 1972; Chiesi et al., 1979; Voss, Vesonder, & Spilich, 1980). Prior knowledge is an essential tool in a reader’s quest for making meaning. Too often a student brings social and cultural knowledge, defined here as culturally bound prior knowledge, to the classroom that is often not reflected in their reading material. This same student is then assessed on his/her responses to texts that assume unfamiliar prior knowledge. The intent of this study is to examine the importance of investigating different types of prior knowledge such as culturally bound prior knowledge on students’ comprehension performance.

**Schema and Reading Comprehension**

The basic premise of the schema theory of reading is that the reader’s organized knowledge of the world provides much of the basis for comprehending, learning, and remembering the ideas in texts (Alvarez, 1990; Anderson, 1994; Bransford, 1994; Norris & Phillips, 1987; Reynolds et al., 1981; Rumelhart, 1975). Schema theorists understand that the act of reading is an interactive process involving simultaneous analysis at many different levels (i.e. written representations, words, meanings,
syntactic, pragmatic, and interpretive) (Alvarez, 1990; Bransford, 1994; Rumelhart, 1975). Schema theory assumes that as people read, they interpret what a segment of a text might mean by theorizing about what the print means and generating hypotheses in their minds (Anderson, 1994; Anderson & Pearson, 1984; Bransford, 1994; Tierney & Pearson, 1986). While prior knowledge is information that is available in the brain, schema theory focuses on how all of that knowledge is organized and used during the reading process. Both concepts are useful in this exploration since it is assumed that whether the prior knowledge is general or culturally bound, the schema operates in the same manner.

In the past, comprehension has been thought to consist of “aggregating the meaning of words to form the meanings of clauses, aggregating the meaning of clauses to form the meaning of sentences, aggregating the meanings of sentences to form the meanings of paragraphs, and so on” (Anderson, 1994, p. 43). Proponents of schema theory declare that words cannot be “added up” to explain the whole message. Instead, they view comprehension “as a matter of activating or constructing a schema that provides a coherent explanation of objects and events mentioned in a discourse” (Anderson, 1994, p. 473). According to this perspective, “knowledge does not consist simply of an unstructured set of individual facts, but rather of organized, interrelated structures or schemata” (Nagy & Herman, 1987, p. 28). The hypotheses that a person has about the meaning of the text is set in the direction of one of the reader’s possibility of meanings, often without the reader’s awareness that an alternative meaning is possible (Anderson, 1994).

According to this theory, a reader comprehends a message when she or he is able to bring to mind a schema that gives a good account of the objects and events described in the message (Anderson, 1994). When the mind is involved in meaningful learning, it organizes new materials into meaningful chunks or slots and relates them to existing cognitive structure in a way that they will become implanted (Ausubel, 1968). A classic study by Bransford and Johnson (1972) illustrated the significance of prior knowledge when they had subjects read paragraphs that were written so that most people would be unable to construct a schema that would account for the material. Except for subjects that were shown a drawing that represented the appropriate context, the subjects were unable to understand or recall most of the text. Schema theory argues that when readers are unable to invoke schema that fits the text, they find the passage incomprehensible.

Schema theory also acknowledges that more than one interpretation of a text is often possible. “The schema that will be brought to bear on a text depends upon the reader’s age, sex, race, religion, nationality, occupation—in short, it depends upon the reader’s culture” (Anderson, 2004, p. 597). The influence of a reader’s
background was illustrated in a study completed by Anderson, Reynolds, Schallert, & Goetz (1977), who asked subjects to read a somewhat ambiguous passage. Some readers understood the passage to be about an escaping convict; others believed the passage to be about a wrestling scene. The two groups of subjects (physical education and music education students) read this passage and responded to test items designed to measure their interpretation. According to the researchers, scores showed striking relationships to the subjects’ background. Assigning different perspectives to readers has also been found to affect their comprehension (Pitchert & Anderson, 1977). These studies illustrate that schema provides a basis for interpreting information. Students with different majors have also been found to interpret text differently to an extent that affects their comprehension.

Readers’ schema also affects their learning and remembering of information and ideas in the text (Anderson, 1994). Sometimes new information conflicts with the readers’ prior knowledge and to resolve this conflict and accommodate the incongruent information, readers must attend to textual cues (Maria & MacGinitie, 1981). These findings point to the importance of a reader’s access to psychological tools (e.g., prior knowledge and/or schema) in making sense of written text. If students from various backgrounds have different experiences or do not have equal access to the scripts and schemas assumed in the text, their comprehension, and thus achievement, might be affected. Although the relationship between schema theory and reading comprehension has been well documented, it is too often overlooked as a tool that can be used to support the reading achievement of disenfranchised students.

**Method**

This study uses a repeated measures design (Wang & Chyi, 2004) to investigate within-group variability of African American students of differing achievement levels. In fall 2001, 117 eighth-grade African American students from four public schools in a large mid-western city participated in this study. Students’ reading comprehension scores from the 2000-2001 Iowa Test of Basic Skills (ITBS) test were used to identify their reading achievement level. Two of the sites were charter schools within the public school system: Gwendolyn Brooks and Audre Lorde charter schools (pseudonyms are used for all schools). Both charter schools classify more than 58% of their students as low income. More than 84% of the students at the non-charter schools, Pearl Cleage and Toni Morrison, were considered low income. All the schools served predominantly African American populations. The students in the classrooms where the study was presented were all African American. In
accordance with the Institutional Review Board (IRB) and the school system’s site-based protocol, the principals and classroom teachers granted permission for their school to be included in the study before the study was presented to the students and their parents.

Participants

Approximately one-half of the 117 eighth-grade students involved in the study were male (N = 62). As noted, all study participants were African American, and all but one was born in the United States. Approximately 22% of the students’ mothers and 30% of their fathers completed high school, and 19% of the mothers and 13% of the fathers had college degrees. Average household size was five. More than 93% of the students at Cleage and Morrison qualified for free lunch. This was higher than the percentage at the two charter schools: 61% at Brooks; 54% at Lorde qualified for free lunch.

Overall, the participants’ instructional reading level ranged from 3.3 (third grade, third month) to 10.4 (tenth grade, fourth month), with a mean reading level at approximately the seventh grade (7.59) and a standard deviation of slightly more than one year (1.2). The high, medium, and low student achievement levels were determined by dividing the grade equivalent reading scores into thirds. This classification was made to determine whether students’ reading ability influenced their use of the cultural information in the text. When the students were tested in the spring of their seventh grade year, 31% tested at 8.0 and higher, 37% tested between 7.0 and 7.8, 21% tested between 6.0 and 6.9, and 11% tested below the sixth-grade reading level. The student with the lowest score in the sample had a reading level of 3.3. The next lowest score was a student at the fifth grade level.

Procedures

In addition to completing a demographic profile, students read six short stories from young adult multicultural anthologies and completed demographic, prior knowledge, and reading comprehension instruments. The short stories were divided into two sets, each containing three stories, each of which represented a different cultural orientation: African American, Chinese American, and European American. Three of the stories featured female protagonists. In session one, students completed a demographic/reading behavior survey. In the next session, students completed a prior-knowledge instrument that measured their understanding of the texts’ cultural and general content. In each of the three subsequent sessions, students independently read a text. To ensure that students were not influenced by the order, texts were counterbalanced within each text set. After reading each story,
students answered literal and inferential multiple-choice reading comprehension items. Students then completed a short post-survey, which posed questions concerning their interest level, text difficulty, and familiarity. This process was repeated for the second set of texts.

**Instruments: Selected Texts, Prior Knowledge, and Reading Comprehension**

Six stories were selected through a review of published multicultural young adult anthologies. The selection involved identifying short stories that included more than 25 cultural references. This ensured enough items to develop a quantitative measure using Rasch analysis (Wright & Mok, 2000). Stories that met this criterion were then analyzed for comparable readability and length. Two stories representing each of the cultural orientations were selected. The cultural orientations were selected based on the varying degrees of familiarity the African American students were assumed to have of each of these cultural belief systems. The Lexile readability measure was used, as reported in Table 1. This score indicates the reading demand of the text in terms of the semantic difficulty and syntactic complexity (Smith, Stenner, Horabin, & Malbert, 1989).

**Table 1. Selected Texts**

<table>
<thead>
<tr>
<th>Story Name</th>
<th>Cultural Orientation</th>
<th>Length (# of Words)</th>
<th>Lexile</th>
<th>Gender / Text Set</th>
<th>Topic(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>“Into the Game”</td>
<td>African American</td>
<td>2,976</td>
<td>600</td>
<td>Male/1</td>
<td>Changing Friendship First Paycheck Learning to Talk to Girls</td>
</tr>
<tr>
<td>“Block Party”</td>
<td>African American</td>
<td>3,283</td>
<td>730</td>
<td>Female/1</td>
<td>Mother-Daughter Relationships Friendship</td>
</tr>
<tr>
<td>“Fox Hunt”</td>
<td>Chinese American</td>
<td>2,799</td>
<td>690</td>
<td>Male/1</td>
<td>Family Ancestry Test Preparation</td>
</tr>
<tr>
<td>“Chang”</td>
<td>Chinese American</td>
<td>7,204</td>
<td>730</td>
<td>Female/2</td>
<td>Family History Multiethnic heritage</td>
</tr>
<tr>
<td>“Great Moves”</td>
<td>European American</td>
<td>3,416</td>
<td>660</td>
<td>Female/2</td>
<td>Changing Friendship School Dance</td>
</tr>
<tr>
<td>“Y2K.CHATRM43”</td>
<td>European American</td>
<td>3,565</td>
<td>620</td>
<td>Male/2</td>
<td>Changing Friendship Global Politics</td>
</tr>
</tbody>
</table>
A multicultural representative panel was formed to ensure that the general and cultural information in each story was accurately interpreted and categorized. Members of the cultural/ethnic groups that these stories represented were expected to have some degree of insider perspective and experiences with the cultural information in the stories. Five people representing each of the ethnic cultures read each of the stories and coded the 25 general and cultural items. Stories were coded by identifying an item (selected phrase, word, expression, statement, or belief), providing a definition, categorizing it as general or cultural, by type (social convention/custom, vocabulary word, language, fact, belief), and identifying any considerations that might influence the interpretation of the item. The panel was given the following working definitions for general and cultural knowledge. “General mainstream information” was defined as core American information or knowledge of popular culture as expressed by non-ethnic mass media, television, or newspapers. Individuals from any cultural or ethnic group would have equal access to this type of knowledge. The working definition for “ethnic-specific cultural information” was items that members of a cultural or ethnic group would be more likely to know as a result of their interactions or experiences with other members of that group.

Because the prior knowledge and reading comprehension instruments were based on the content of the specific text, existing items were unavailable. Therefore, the researcher constructed these items and conducted item analysis using Rasch model analysis (Wright & Mok, 2000). The instruments were piloted in spring 2001 with 19 eighth-grade students. Reliability coefficients on the prior knowledge instrument and reading comprehension items were 0.74 and 0.70, respectively. Forty-six prior knowledge items and 13 reading comprehension items had high misfit values and were deleted.

The two prior knowledge assessments combined items from three of the stories, one from each cultural orientation. There were 193 prior knowledge items in text-set one and 198 items in text-set two. Question formats included binary choice, free association, and multiple choice (translation, synonyms, and antonyms). The yes/no binary choice items inquired about the students’ experiences with the activities in the stories (i.e., Have you ever been on a subway train with your friends?). Students were given an opportunity to write what came to their mind on the free association questions (What do you think of when you hear the words standardized achievement test?). The remaining questions tested specific knowledge, as opposed to merely self-report. Students were asked to demonstrate their vocabulary knowledge, phrase translation ability, and respond to items that related to the specific details in the story. This measurement included items that inquired about their knowledge of culture-specific vocabulary, proverbs and sayings, language style and
use, and historical knowledge. Examples of the general and cultural multiple-choice items for each of the cultural orientations are provided in Table 2. The questions required the students to either answer a question or translate a phrase or saying using four options. They also identified the synonym or antonym for select vocabulary words.

**Table 2. Examples from Prior Knowledge Instrument**

**African American**

What does “freshly clipped shape-ups” refer to? (Culturally Bound Knowledge Item)
- a. Exercise routine
- b. Flower
- c. Food
- d. Hair cut

Which of the following would you expect to see on a paycheck? (General Knowledge Item)
- a. F.I.C.A.
- b. Parents’ name
- c. Savings account balance
- d. Lunch menu

**Chinese American**

*Shaolin Temple* is located in (Culturally Bound Knowledge Item)
- a. Colorado
- b. California
- c. China
- d. Chile

When do students take the *PSAT*? (General Knowledge Item)
- a. After the MCAT
- b. After High School
- c. Before the GRE
- d. Before the SAT

**European American**

*Feathered* is a type of (Culturally Bound Knowledge Item)
- a. Dress
- b. Hairstyle
- c. Car
- d. Food

When something is a force of habit, it is (General Knowledge Item)
- a. Involuntary
- b. Voluntary
- c. Chosen
- d. Controlled

The reading comprehension assessment for each story was administered individually after the students read the selected texts. The instruments were each composed of 30 multiple-choice items. Examples of the reading comprehension items are presented in Table 3.
Table 3. Reading Comprehension Instrument Item Examples

**African American**

The boys looked lonesome even though they had just gotten

a. A promotion c. Haircuts
b. A new Lexus d. New clothes

The boys received the money they earned minus

a. Their lunch money c. Dues for their membership
b. Social Security and Federal taxes d. The cost of stamps

**Chinese American**

To escape pressure, Andy daydreamed about

a. Being popular c. His ancestors
b. Exciting adventures d. Going to college

Both Lee and Andy were interested in studying for the

a. LSAT c. PSAT
b. SAT d. GRE

**European American**

The big event that Brenda and Annie were discussing in Annie’s room was

a. Christmas Party c. Birthday party
b. A Valentines day dance d. A sleep over

When they were in Annie’s bedroom Brenda was having trouble being Annie’s best friend because of

a. Jealousy c. Fear
b. Anger d. Betrayal

**Measures**

The prior knowledge measurement included the number of correct responses to the multiple choice, translation, and synonym/antonym items. There were 50 multiple-choice, 63 translation, 33 synonym, and 18 antonym items for text-set one. Text-set two included 112 multiple-choice, 39 translation, 13 synonym, and 15 antonym items. The student measure is based on the number of multiple-choice items the students responded to correctly. The item reliability for the prior knowledge items was 0.95. In text-set one, there were 96 general prior knowledge items. In text-set two, there were 74 general prior knowledge items.

Literal and inferential item types were included and used for each text’s reading comprehension instrument. The reading comprehension instrument for each text consisted of multiple-choice items, each with four answer options.
These items tested reading skills such as interpreting attitudinal meaning, understanding explicitly stated information, understanding implicit information in the text, understanding conceptual meaning, understanding relations between parts of the text, and distinguishing the main idea from supporting details. Reliability of this measurement instrument was determined by the Rasch model analysis (Wright & Mok, 2000). The reliability for the combined reading comprehension item was .93.

**Data Analysis**

To measure the effects of cultural orientation of texts, prior achievement, and prior knowledge on the students’ reading comprehension performance, the study used the Rasch model and a one-way analysis of variance (ANOVA). The Rasch Rating Scale Model (Wright & Mok, 2000) provides estimations of difficulty of the comprehension and prior-knowledge items (Wright & Stone, 1979). This psychometric model generates estimates of a person’s ability in the same linear metric as the items, and tests the fit of the data to the model. The model makes it possible to provide the probability that a person at a given position should succeed on certain items and fail on others. A detailed analysis of the prior-knowledge items was conducted to determine their relationship with reading comprehension performance for each story type.

**Results**

The purpose of the study was to determine the role cultural relevance plays in the reading comprehension process. A basic assumption throughout this analysis is that cultural knowledge is a significant tool that mediates the comprehension process. Some students may appear to be low-performing, when in fact they are being assessed with material that does not match their schemata. To determine whether this is the case and if access to prior knowledge differs for students at different ends of the achievement spectrum, three achievement groups were explored in this study: high, mid-range, and low. High-achieving students significantly outperformed the mid-range and low achieving students on the African American, Chinese American, and European American texts and reading comprehension instruments, as reported in Tables 4 and 5. This finding is linked to what reading research has uncovered in the exploration of struggling and expert readers: skilled readers use strategies such as looking back in the text, making predictions, and invoking their prior knowledge that unskilled readers lack (Garner & Reis, 1981; Oakhill & Patel, 1991; Pressley, Brown, Van Meter, & Schuder, 1995; Swanson & De La Paz, 1998).
Table 4. Means and Standard Deviations of Reading Comprehension Student Measures by Prior Achievement

<table>
<thead>
<tr>
<th>Cultural Orientation and Achievement Level</th>
<th>N</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
<th>Minimum</th>
<th>Maximum</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>28</td>
<td>62.74</td>
<td>9.79</td>
<td>1.85</td>
<td>39.63</td>
<td>80.77</td>
</tr>
<tr>
<td>Mid-Range</td>
<td>41</td>
<td>57.39</td>
<td>7.67</td>
<td>1.19</td>
<td>43.81</td>
<td>75.46</td>
</tr>
<tr>
<td>Low</td>
<td>34</td>
<td>49.50</td>
<td>8.57</td>
<td>1.47</td>
<td>34.76</td>
<td>67.16</td>
</tr>
<tr>
<td>Total</td>
<td>103</td>
<td>56.24</td>
<td>9.97</td>
<td>.98</td>
<td>34.76</td>
<td>80.77</td>
</tr>
<tr>
<td><strong>Chinese American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>29</td>
<td>62.64</td>
<td>8.81</td>
<td>1.63</td>
<td>40.67</td>
<td>78.37</td>
</tr>
<tr>
<td>Mid-Range</td>
<td>40</td>
<td>55.94</td>
<td>6.23</td>
<td>.98</td>
<td>42.47</td>
<td>72.83</td>
</tr>
<tr>
<td>Low</td>
<td>33</td>
<td>49.76</td>
<td>6.24</td>
<td>1.08</td>
<td>38.66</td>
<td>65.62</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>55.85</td>
<td>8.61</td>
<td>.85</td>
<td>38.66</td>
<td>78.37</td>
</tr>
<tr>
<td><strong>European American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>29</td>
<td>62.27</td>
<td>7.42</td>
<td>1.37</td>
<td>46.39</td>
<td>73.57</td>
</tr>
<tr>
<td>Mid-Range</td>
<td>40</td>
<td>55.65</td>
<td>5.30</td>
<td>.83</td>
<td>43.68</td>
<td>65.31</td>
</tr>
<tr>
<td>Low</td>
<td>31</td>
<td>49.62</td>
<td>7.67</td>
<td>1.37</td>
<td>32.97</td>
<td>63.45</td>
</tr>
<tr>
<td>Total</td>
<td>100</td>
<td>55.70</td>
<td>8.29</td>
<td>.82</td>
<td>32.97</td>
<td>73.57</td>
</tr>
</tbody>
</table>

Note: SD = standard deviation; SE = standard error.

Table 5. Analysis of Variance Summaries of Reading Comprehension Student Measures by Prior Achievement

<table>
<thead>
<tr>
<th>Cultural Orientation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2781.9</td>
<td>2</td>
<td>1390.10</td>
<td>18.89</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>7365.4</td>
<td>100</td>
<td>73.65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>10147.4</td>
<td>102</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chinese American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2560.3</td>
<td>2</td>
<td>1280.17</td>
<td>25.70</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>4930.9</td>
<td>99</td>
<td>49.81</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>7491.2</td>
<td>101</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>European American</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Between Groups</td>
<td>2398.4</td>
<td>2</td>
<td>1199.21</td>
<td>26.43</td>
<td>.000</td>
</tr>
<tr>
<td>Within Groups</td>
<td>4401.9</td>
<td>97</td>
<td>45.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>6800.3</td>
<td>99</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Df = degrees of freedom, F = ratio of two s squares.
High-achieving students had the highest means for reading comprehension on the culturally relevant texts. This pattern implies that high-achieving students may have the ability to negotiate across the cultural contexts of the short stories. On the other hand, low-achieving students’ reading skills may hinder their ability to use prior knowledge as a tool in the comprehension process given that they may struggle with basic facets of the reading process. In comparison, the mid-range students’ reading skills may place them in a position to effectively use their culturally bound prior knowledge to better comprehend the culturally relevant texts. It is important to consider the value of this finding for students who read slightly below grade level.

Table 6 presents results from an analysis that classified students by their levels of culturally bound prior knowledge of the different cultures presented in the short stories. Students with a large amount of prior knowledge of their own culture performed well on each of the reading comprehension measures. This suggests that students who know about their own culture’s values, history, expressions, and practices are better able to negotiate meaning in other cultural contexts.

**Table 6.** Descriptive Statistics for Culturally Bound Prior Knowledge Levels and Reading Comprehension

<table>
<thead>
<tr>
<th>Cultural Knowledge Level</th>
<th>Mean</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>African American Reading Comprehension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (N = 39)</td>
<td>64.53</td>
<td>8.19</td>
<td>1.31</td>
</tr>
<tr>
<td>Mid-Range (N = 36)</td>
<td>56.90</td>
<td>7.55</td>
<td>1.26</td>
</tr>
<tr>
<td>Low (N = 36)</td>
<td>47.84</td>
<td>6.80</td>
<td>1.13</td>
</tr>
<tr>
<td>Total (N = 111)</td>
<td>56.64</td>
<td>10.17</td>
<td>.97</td>
</tr>
<tr>
<td><strong>Chinese American Reading Comprehension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (N=39)</td>
<td>62.34</td>
<td>8.06</td>
<td>1.29</td>
</tr>
<tr>
<td>Mid-Range (N = 34)</td>
<td>56.32</td>
<td>5.12</td>
<td>.88</td>
</tr>
<tr>
<td>Low (N = 36)</td>
<td>48.84</td>
<td>6.55</td>
<td>1.09</td>
</tr>
<tr>
<td>Total (N = 109)</td>
<td>56.00</td>
<td>8.73</td>
<td>.84</td>
</tr>
<tr>
<td><strong>European American Reading Comprehension</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High (N = 39)</td>
<td>62.18</td>
<td>6.87</td>
<td>1.10</td>
</tr>
<tr>
<td>Mid-Range (N = 35)</td>
<td>56.30</td>
<td>5.96</td>
<td>1.01</td>
</tr>
<tr>
<td>Low (N = 34)</td>
<td>48.85</td>
<td>6.72</td>
<td>1.15</td>
</tr>
<tr>
<td>Total (N = 108)</td>
<td>56.08</td>
<td>8.50</td>
<td>.82</td>
</tr>
</tbody>
</table>

Note: SD = standard deviation; SE = standard error.
An analysis of how reading ability and culturally bound prior knowledge function to support reading comprehension requires categorizing the sample by their reading and cultural knowledge levels (high, mid-range, low) and their culturally bound prior knowledge levels (high, mid-range, low). This classification yielded nine categories. For example, students were identified as High reading–High cultural knowledge, Mid-range reading–Low cultural knowledge, Low reading–High cultural knowledge, or Mid-range reading–Mid-range cultural knowledge. Only students who completed the reading comprehension assessments for both of the African American texts were included in this analysis. The correlation between the students’ grade-equivalent reading score and their culturally bound prior knowledge level was .606, which was significant at the 0.01 level.

As the cross tabulation in Table 7 shows, student levels of African American, culturally bound prior knowledge were not necessarily the same as their prior achievement category. Fifty-six percent of the high-achieving students had high prior culturally bound knowledge. Thirty-nine percent of students achieving at mid range had high levels of culturally bound prior knowledge, whereas, 37% of the low-achieving students had high or mid-range levels of culturally bound knowledge.

For some students, reading scores on the Iowa Test of Basic Skills were not necessarily associated with their level of culturally bound prior knowledge.

Table 7. Cross Tabulation Prior Achievement Level and African American, Culturally Bound, Prior Knowledge Level

<table>
<thead>
<tr>
<th>Prior Achievement Level</th>
<th>Culturally Bound Prior Knowledge Level</th>
<th></th>
<th></th>
<th></th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>High</td>
<td>Mid-Range</td>
<td>Low</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>17</td>
<td>11</td>
<td>3</td>
<td>31</td>
<td></td>
</tr>
<tr>
<td>Mid-Range</td>
<td>16</td>
<td>16</td>
<td>9</td>
<td>41</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>3</td>
<td>10</td>
<td>22</td>
<td>35</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>36</td>
<td>37</td>
<td>34</td>
<td>107</td>
<td></td>
</tr>
</tbody>
</table>

ANOVA was conducted to evaluate the relationship between students’ African American culturally bound prior knowledge classification and their reading comprehension performance. The ANOVA was significant: F (8.94) = 13.62, p = .000. As the means plot depicted in Figure 1 illustrates, high culturally bound prior knowledge functions as a support for reading comprehension for the African American stories. The x axis represents the students’ categorization by reading level (high, mid-range, low) and culturally bound prior knowledge level (high, mid-range, low). Reading comprehension scores are represented on the y axis.
The graph shows that the students with lower reading levels but higher levels of cultural knowledge have higher reading comprehension scores than the students with higher reading levels but lower levels of culturally bound prior knowledge. For example, the mean reading comprehension score for the mid-range reading students with high culturally bound prior knowledge levels is greater than the mean for students with high reading levels whose culturally bound knowledge score falls in the mid-range. Students with high reading levels and low levels of cultural knowledge have lower scores than their peers with low reading levels and high, mid-range, and low levels of culturally bound prior knowledge. Finally, students with low reading levels but high culture knowledge scored higher than students with mid-range reading ability and low cultural knowledge. In other words, the level of cultural knowledge influenced students’ comprehension despite their placement on the reading achievement spectrum. Figure 2 illustrates results for Chinese American texts and culturally bound prior knowledge. Knowledge of the Chinese American culture also supports reading comprehension, but the degree and pattern are different from those among African American texts. These results strongly suggest that culturally bound prior knowledge plays a significant role in supporting African American students’ reading comprehension.
Figure 2. Prior achievement and culturally bound levels and reading comprehension for Chinese American texts.

**Discussion and Conclusion**

This exploration of the relationship between cultural orientation of literature and student reading comprehension among low, mid, and high level readers revealed some expected and unexpected results. As expected, high-achieving students significantly outperformed the other students on the African American, Chinese American, and European American texts and reading comprehension instruments. A closer examination of the role that culturally bound prior knowledge plays in the reading comprehension process was conducted by classifying the students by their culturally bound prior knowledge and their reading comprehension levels. The analysis revealed a possibly unexpected result when it showed that students’ level of culturally bound prior knowledge of the African American stories content significantly influenced their reading comprehension performance, despite their prior achievement level. This significant result provides support for looking at culturally bound prior knowledge as a cognitive tool that can be used to structure more effective learning tasks.

The importance of exploring the role that prior knowledge plays in text comprehension is vital to disenfranchised students of color. This investigation finds that prior knowledge not only plays a supportive role in reading comprehension for
African American students, but it also has a leveraging effect for readers at different achievement levels. This result supports previous findings that reading culturally relevant texts is beneficial to student performance (Conrad, Gong, Sipp, & Wright, 2004; McCollin & O’Shea, 2005; Pinkard, 2001; Zolbrod, 2006). Considering the cultural load of many texts used in the classroom, this study of culturally bound prior knowledge expands the current research conversation by examining distinct types of prior knowledge.

This examination of the effect of culturally relevant literature on student reading comprehension has implications for curricular design, classroom instruction, reading intervention strategies, and assessment. The data clearly illustrate that a high level of culturally bound prior knowledge supports students’ reading comprehension. This finding is particularly important to readers at the mid-range achievement levels given that those mid-range achievers with high levels of the cultural knowledge outperformed high-achieving readers whose knowledge of the cultural content was low. The findings support the positive impact of cultural relevance on reading comprehension performance and shed light on No Child Left Behind’s limited goal of proficiency for lower-income students (Wyner, Bridgeland, & DiIulio, 2007). Incorporating prior knowledge strategies can support teachers in their quest to maintain and promote high achievement for students who meet or exceed standards.

Although prior knowledge is discussed in teacher manuals, and many strategies exist, the use of prior knowledge as a cognitive tool that connects prior learning in the classroom with prior knowledge derived from experiences outside of school is limited (Myhill & Brackley, 2004). Understandably, developing curriculum around each student’s prior knowledge would be an impossible task. However, this study’s findings provide support for developing curricula that assess students’ prior knowledge of a topic or concept when introducing a new concept. This approach could help teachers identify gaps in student understanding, and in response they could tailor classroom activities accordingly. Another implication that addresses the instructional power of prior knowledge is its value when learning new skills. Placing a skill lesson in a familiar context, whenever possible, may scaffold the learners’ acquisition of the new concept by decreasing the amount of new information. This approach is in line with Wertsch’s (1991) toolkit framework, as well as other sociocultural educational theories (Baker & Sonnenschein & Serpell, 1994; Lee & Slaughter-Defoe, 1995; Maehr, 1974; Saito, 2000; Wertsch, 1991).

This study’s contribution to reading research lies in its investigation of culturally bound prior knowledge in relation to reading comprehension for students at various achievement levels. The importance of investigating students’ prior knowledge increases when the text contains a significant amount of cultural knowledge.
When the text includes language, phrases, expressions, historical facts, and scripts from different ethnic groups, equal prior knowledge cannot be assumed. The significance of this result ties directly to the importance of examining textual content for cultural load and determining students’ prior understanding and experiences of the texts’ general and cultural knowledge in formative determinations of comprehension performance. Because culturally bound prior knowledge is strongly associated with comprehension, it follows that intervention strategies that increase students’ cultural knowledge of their own and different racial and ethnic groups could be beneficial for reading comprehension performance.

This study is not without limitations, and the results should be interpreted accordingly. First, the sample size was small and varied among the school groups. Although the sample was drawn from four different schools, it is impossible to make generalizations about application of the results to other populations. Second, all subjects were in eighth grade. Therefore, the results cannot be generalized to similar groups in other grades. Third, only one racial group was considered for this analysis. Although the sample allowed a unique opportunity to investigate within-group variability that may have been overlooked in a group comparison, a cultural comparison group was not included in the analysis. As for the texts themselves, stories were selected on the basis of the amount of cultural knowledge in the text. A large number of instances of cultural knowledge were needed for the quantitative analysis by item type. Because these texts were from anthologies of young-adult fiction and not artificial text, they are not exact parallels in terms of length, story grammar, structure, or cultural content. Therefore, other characteristics of the text may be affecting comprehension performance. Therefore, the results may, in part, be due to text effects. Finally, the findings may likely be confounded by the difficulty level of the text.

To better understand the role that culturally bound prior knowledge plays, researchers could use comparative groups to determine whether the items relating to the African American stories were easier questions or were easier for the African American students. Because measuring reading skills often involves both fiction and nonfiction stories, a replication of this study should also be conducted using both forms of literature that contain cultural knowledge. The presentation of cultural knowledge in fiction and expository texts may have a different effect on reading comprehension. Finally, qualitative interviews could be used to uncover how students access culturally bound prior knowledge while reading. A metacognitive exploration could identify textual triggers that scaffold understanding and performance.

In conclusion, the results provide validity for culturally relevant teaching by exploring the relationship between prior knowledge, reading materials, and
performance. The findings are important for students performing in the middle ranges, those who are disenfranchised and whose cultural experiences are unrelated to many of their academic tasks. Using culturally congruent materials with students of color to assess and teach reading skills may prove more successful than ignoring cultural tools in the reading process. Equipping teachers with valid support for their use of culturally congruent material is an easily replicable way to use “culture as a lever to support learning” in the classroom (Lee, 2001, p. 136).

References


Untapped Cultural Support


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Untapped Cultural Support: The Influence of Culturally Bound Prior Knowledge on Comprehension Performance
Reading the Past: Historical Antecedents to Contemporary Reading Methods and Materials

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Abstract

This article addresses the International Reading Association’s foundational knowledge requirement that educators recognize historical antecedents to contemporary reading methods and materials. The historical overview presented here highlights the ineffective methods and restrictive materials that have been discarded and the progress that has been made in the development of more effective and inclusive reading materials. In addition, tributes are paid to seldom-recognized innovators whose early efforts to improve reading instruction for their own students resulted in important change still evident in materials used today.

Why should an educator be interested in the history of literacy? It has been frequently suggested that knowing history allows us to learn from the past. Historian Carl Kaestle (1995) took a less global view when he noted that while “history cannot tell us the answers, it may provide some understanding of the problems” (p. 330). For decades, reading scholars have argued about the best method for teaching reading. Should teachers use phonics? A whole-language approach? Both? Neither? This question spawned the “Reading Wars” and “The Great Debate” (Chall, 1967). Because the debate continued to rage, Chall (1983) returned to it when she suggested that both phonics and whole-word approaches have their places in reading instruction. She posits that a different emphasis is required at different stages of a reader’s development. Thus we have balanced literacy. The friction associated with these debates spurred the International Reading Association (2004) on to include in Standard 1: Foundational Knowledge, the requirement that educators “Recognize historical antecedents to contemporary reading methods and materials” (p. 9).
Additionally, a Kansas Department of Education Knowledge Indicator requires that, “The reading specialist recognizes that literacy can be a means for transmitting moral and cultural values” (Kansas State Department of Education, 2006, p. 5). The purpose of this article is to discuss these requirements: the historical antecedents to contemporary reading methods and materials, and the values those antecedent materials conveyed. Primary source materials used for this research are from the University of Kansas, Kenneth Spencer Research Library, Charles and E. Jennifer Monaghan Collection on the History of Reading in the United States.

**Alphabet Method**

At the birth of our country, predominant values present in Colonial reading materials were Christian, Protestant, and Puritan. A child’s printed introduction to Christianity was typically the hornbook, which was named for the translucent horn used to protect the text. This first reader contained the alphabet, a set of syllables called a syllabary, the invocation, and the Lord’s Prayer (see Figure 1). In a 1691 diary entry, Samuel Sewall recorded sending his toddler off to school carrying a hornbook (Monaghan, 2005). Reading instruction could be offered to children this young because the method used was an oral, spelling approach to reading, called the “alphabet method.” In this method, which was essentially the only approach to reading instruction in use until about 1820, children first named the letters of the alphabet, spelled aloud the syllables in the syllabary (e.g., “ab,” “eb,” “ib,” “ob,” “ub,” etc.), and then spelled and recited each word of the printed prayer (see Monaghan, 2005, pp. 386-387).

The mainstay of Colonial primary education was the primer, so named because it was thought to contain the primary essentials for one’s spiritual existence. In fact, the word primer originally meant a book of prayers (Harris & Hodges, 1995). Unlike the hornbook, primers were true books as some were more than 70 pages and were comprehensive texts. The first truly American primer, printed on an American press and designed for the American market, was the *New-England Primer*, published shortly before 1690 (Monaghan & Barry, 1999). Although sizes and shapes of primers differed, they were generally very small, probably because paper, which had to be imported from England through most of the 17th century, was a valuable commodity. Indeed, the standard size of the *New England Primer* (1727) was only $2\frac{1}{2} \times 4$ inches.
Like that of the hornbook, the content of the primer was Christian in nature. Unlike the hornbook, however, the New-England Primer reflected the beliefs of the Puritans. These beliefs are embodied, for example, in the alphabet verses, which were the best-remembered feature of the Primer. The doctrine of original sin was evident in the first verse of the woodcut print: “In Adam’s Fall/We Sinned All,” and the hope of salvation provided by the Bible in the second: “Thy Life to Mend/This Book Attend.”

After this introductory alphabet, there was an extensive syllabary (i.e., a table or listing of syllables), then words of one syllable, chosen for their familiarity, e.g., “God,” “grace,” “peace.” Again, the child was directed to first orally spell, then say these words. The following pages offered words in an increasing number of syllables, up to five, such as “For-ni-ca-ti-on” and “Ex-hor-ta-ti-on.” Clearly, such words were not developmentally appropriate for young children, but children’s interests were thought to be irrelevant to the need for religious instruction, and reading was merely a vehicle for accessing the religious text. This became even more evident in the largest section of the primer, the catechism, which took the form of questions and answers (e.g., “Q: What is sin? A: Sin is any want of conformity unto, or transgression of the law of God,” n.p.).

The primer, like the hornbook, was translated for Native Americans by Colonists, who hoped to teach their neighbors to read and, in doing so, convert
them to Christianity. The third version of the Indian primer was the first bilingual text to be printed in the Colonies. It was printed with Massachusetts and English languages side-by-side as shown in Table 1.

Table 1. Title page of The Indian Primer or the First Book (1720)

<table>
<thead>
<tr>
<th>Massachusetts Indian language text</th>
<th>English language text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indiane</td>
<td>The Indian</td>
</tr>
<tr>
<td>PRIMER</td>
<td>PRIMER</td>
</tr>
<tr>
<td>Afuh</td>
<td>OR</td>
</tr>
<tr>
<td>NEGONNEYEUUK</td>
<td>The FIRST Book</td>
</tr>
<tr>
<td>Ne nafhpe Mukkiefog</td>
<td>By which Children</td>
</tr>
<tr>
<td>Woh</td>
<td>may</td>
</tr>
<tr>
<td>Tauogwunnamuhkuttee</td>
<td>know truly</td>
</tr>
<tr>
<td>Ogketamunnate Indiane</td>
<td>to read the Indian</td>
</tr>
<tr>
<td>Unmontoowaonk.</td>
<td>Language</td>
</tr>
</tbody>
</table>

This tedious alphabet method, with its dependence on recitation and memorization, required the discipline that Puritans found important. Additionally, instruction during the Colonial period had to prepare individuals to be independent learners because of the very limited time spent in school. By the year 1800, most people attended fewer than 90 days of schooling in their entire lifetime (Cubberly, 1934).

Around the time of the American Revolution, it was no longer considered appropriate to use reading materials that had been printed in England. A young, patriotic American named Noah Webster decided the new nation should publish its own spellers, with a uniform pronunciation and spelling, designed to unite the new country (Balmuth, 1992; Monaghan, 1983). The speller of the 1700s actually was intended to teach reading, spelling, religion, and morality. Webster used his own money to pay for the publication of his nation’s new speller, and in 1783, it was the first one published on an American press. A man who truly loved words, he titled it, A Grammatical Institute of the English Language, Comprising an Easy, Concise, and Systematic Method of Education, Designed for Use of English Schools in America. In Three Parts (n.d.). The three parts were spelling, grammar, and essays for reading.

The First Part of Webster’s book used the alphabet method, beginning with a lengthy syllabary. It then moved to lists of words with increasing numbers of
syllables, culminating in words with eight syllables. Interspersed among the word lists were “lessons,” which contained sentences and selections with moral messages. The Third Part of Webster’s speller, the reader, was designed for children who could already read. The selections were very dry, however, and not likely to appeal to young readers. It included speeches of Roman tributes, for example, and political pieces, such as “A Declaration by the Representatives of the United Colonies of North America, Setting Forth the Causes and Necessity of Their Taking up Arms, July 6, 1775.” Samuel Pettengill, who owned the book pictured in Figure 2, apparently found Webster’s reading selections so boring that on several pages, he carefully pasted Charles Dickens’ “The Detective Story” and other short stories over the original text.

Despite the dull reading selections, Webster’s book was the most popular introductory reading textbook in the United States until the 1820s, when it began to look old-fashioned. Its widespread popularity did, however, reinforce the instructional methods it contained. Webster supported his family with the income from its sales during the 30 years it took him to write his famous dictionary, An American Dictionary of the English Language (1828), (Monaghan & Barry, 1999).
Focus on Meaning

In the 1820s, American educators began to look at the work of European educational reformers like Rousseau and Pestalozzi, who stressed the importance of meaning for the child (Mathews, 1966; Monaghan, 2005). Horace Mann and other like-minded educators believed that American education’s chief weakness was the meaninglessness of its material. They published their views in the *American Journal of Education* and criticized the old spelling books, with their long lists of incomprehensible words and tedious essays. In response to this criticism, educators created a series of readers that graded material according to its difficulty and included information for teachers, such as prereading activities, comprehension questions, and stories that would interest children who were learning to read. The best-known series from this new type of reader was the Eclectic series of William Holmes McGuffey (first published in 1836). These new instructional methods were not McGuffey’s brainchild, however, but that of Samuel Worcester, who published them in the *Primer of the English Language* (1826), (Venezky, 1987). Indeed, McGuffey borrowed so liberally from Worcester’s innovative ideas that Worcester and his publisher sued McGuffey and his publisher for plagiarism and won an out-of-court settlement for $2,000 in 1838 (Monaghan & Barry, 1999).

The McGuffey Readers were so successful partly because they were shrewdly and aggressively marketed (Venezky, 1987) and also because the publishers knew their constituents. For example, McGuffey stories avoided any reference to slavery or to Abraham Lincoln that might offend the Southern market. Included, however, especially in the early editions, was a strong theological element. The second reader of 1837, for instance, contained the story, “How the World was Made,” which marked the date of the creation of the world at 4000 B.C. Cultural values were supported by stories like “The Good Girl,” which glorified the female roles as caregivers and dutiful mothers. Main characters or those who showed moral or physical courage were inevitably males. With sales estimated at 120 million, McGuffey readers were responsible for widely disseminating cultural and religious values through stories and comprehension questions, such as, “By whom was the earth made?” and “How long is it since the earth was made?” (McGuffey, 1837, p. 83).

By the 1830s, a group of educators began to advocate that words be presented as wholes. They argued that children learned from whole to part, not from part to whole, which was the idea with the alphabet method (Mathews, 1966; Monaghan, 2005). They began to experiment with introducing whole words with pictures and concrete experiences. Children were asked to link printed words to words already in their speaking vocabulary. Instant recognition was the goal, so children learned
words by sight. This word method is operationalized in readers like the one shown in Figure 3.

![Figure 3](image_url)

**Figure 3.** Hillard, G.S. & Campbell, L.J. (1873). *The Franklin Primer or First Reader.* Boston: Brewer and Tileston. Meaning emphasis, whole-word approach.

### Phonics

Around the time of the Civil War, “phonie” readers began to emphasize the sounds that letters made instead of merely their names. These readers used (a) an invented or reformed alphabet, (b) diacritical markings on the traditional alphabet, and (c) synthetic phonics, an approach that converts letters into sounds and then blends the sounds.

### Invented or Reformed Alphabet

Some individuals in the 1800s believed the only scientific way to begin reading instruction was to use an alphabet with one-to-one correspondence between sounds and letters (Harrison, 1964; Monaghan & Barry, 1999). This would avoid the confusion created by multiple spellings for one sound, such as the many possible spellings for the long “a” sound (ate, champagne, rain, arraign, gauge, ray, expose, suede, steak, matinee, eh, veil, feign, Marseilles, beret, obey). One individual
who advocated the use of a new alphabet was Isaac Pitman, an Englishman, who in 1844, devised and published the first “phonetic” alphabet, in particular to aid spelling (Harrison, 1964). About a decade later, Brigham Young hired George Watt, a phonetic expert who studied under Pitman, to create a similar alphabet with one-to-one sound-symbol correspondence. The Deseret alphabet was the result of Watt’s efforts and was the basis for the Deseret Series of Readers, which were used in the Utah Public Schools to teach beginning reading and to teach converts coming to Salt Lake City from countries around the world. As can be seen in Figure 4, this alphabet was quite different from the traditional alphabet.


The Deseret Series, with its extreme variance from the traditional alphabet, eventually was discontinued for several reasons. These included children’s confusion at learning two systems, lack of popular support, cost, competition from materials printed in the conventional alphabet, and the arrival of the railroad in 1869, which ended the isolation of the Mormons (Monaghan & Barry, 1999). Interestingly, however, in 1959, James Pitman modified his grandfather’s alphabet and used letters closer to traditional print to create the Augmented Roman Alphabet, later renamed the Initial Teaching Alphabet (i.t.a.). Pitman intended that the i.t.a. only be used in the initial stages of teaching reading. This Initial Teaching Alphabet was brought
to the United States from England and used in U.S. schools during the 1960s and 1970s (Harrison, 1964).

Diacritical Markings on the Traditional Alphabet

Other educators, however, believed that instead of a reformed alphabet, text should include diacritical marks that showed how letters were to be pronounced (Monaghan & Barry, 1999). Edward G. Ward, former superintendent of schools in Brooklyn, New York, produced a popular set of readers at the end of the 1800s that made extensive use of diacritical marks. Stories such as “The Little Red Hen” and fables like “The Wind and the Sun” appeared in this reader, along with tales of speaking animals. The tale of Little Silver-Hair and the three bears is still recognizable (See Figure 5).

![Figure 5](image)

**Figure 5.** Ward, Edward G. (1896). *The Rational Method in Reading. Second Reader.* Boston: Silver Burdett & Co. Phonic approach via diacritical markings.

Synthetic Phonics Approaches

While diacritical markings were often used to introduce new words before a story was read, synthetic phonics approaches, in place by the end of the 1800s, did not include text with diacritical markings (Monroe, 1877; Pollard, 1889). Readers
in this category instead followed a predictable sequence: (a) Teach the letter names and their sounds, usually with pictures; (b) Sound out and blend words as soon as a few letter-sounds are learned; and (c) Orally read sentences and stories containing words with the letter sounds learned. Today these would be called decodable texts. While synthetic phonics is still widely used in the twenty-first century, analytic (whole-to-part or deductive phonics), and an analogy form using onset and rime or word families, (Adams, 1990) have replaced diacritical markings and invented alphabets. An early example of synthetic phonics can be seen in Monroe’s (1877) Chart-Primer (Figure 6).

![Image](chart-primer.png)

**Figure 6.** Monroe, Lewis B. (1877). *The Chart-Primer, or First Steps in Reading.* Philadelphia: Cowperthwait & Co. Phonic approach via synthetic phonics.

**Modern Readers**

While the method of reading instruction changed after the 1820s (from the alphabet method to meaning-and phonics-based approaches), so too, did the materials change. After the Civil War, reading series appeared much as they are
today. There was generally a primer and five or six graded readers. Instructions were provided for the teacher for the first time in Worcester’s Primer of the English Language (1826) and prereading activities were incorporated as well (Monaghan & Barry, 1999). McGuffey’s Second Reader (1837) was one of the earliest to include comprehension questions (Monaghan & Barry, 1999). Ellen Cyr was the first author to produce a series with eight books and also was the first American woman with a widely sold reading series marketed under her name (Barry, 2005). Her beginning reader was published in 1886, and her series, which was translated into Spanish, Japanese, and Braille, became California’s state-adopted reading series in 1905. Cyr’s readers represented a change in both methods and in the cultural values they presented. She was ahead of her time in incorporating silent-reading comprehension activities and instruction, and her primer was significantly longer than those of her contemporaries, which allowed children far more practice reading new words in context before additional words were added (Barry, 2005). Regarding cultural shifts, Cyr’s stories also included female main characters and girls who took action, unlike other popular readers, such as McGuffey’s. By Cyr’s Third Reader (1902), she also provided stories by and substantial biographies of female authors, including Julia Dorr, Louisa May Alcott, Harriet Beecher Stowe, and Celia Thaxter. Cyr thus showed the children who read her books that girls could grow up to be something other than caregivers; they could be writers.

Sentence and Story Methods

By the 1880s, educators like Colonel Francis Parker and George Farnham began to promote the importance of meaning and understanding in beginning-reading instruction. Reading was thought getting, explained Parker in his Talks on Teaching (1883). In response to Parker and to George Farnham’s The Sentence Method of Reading (1895), sentence-method and story-method readers began to appear. In the sentence method, as Parker (1883) and Farnham (1895) explained it, the teacher presented the story one sentence at a time through questioning and the use of illustrations. For the page below (Figure 7), the teacher might show the picture of the apple and ask, “What is this?” Student’s whole-sentence responses were written on the blackboard, and children read each sentence as it was presented. In a sense, the child “discovered” his/her way through the text. After constructing a story using this holistic approach, the teacher worked from the whole sentence to the part. Sentences were examined by words (apple, see, etc.), and then words were examined by letters (a, s, etc.).
In the story method, teachers began instruction by reading the complete text to the child from the reader. Children memorized the story, often a rhyme or fairy tale with repetitive refrains, before they saw it in print. This approach was seen in Charles Eliot Norton’s *The Heart of Oak Books* (1902). Norton believed that selection of content, not methodology, was the critical element in teaching beginning reading, and therefore he tried to have his books nourish “the growing intelligence of the child...with selected portions of the best literature” (Norton, 1902, p. vi). Full-color illustrations used in readers of the early 1900s also enhanced their content.

**The Influence of Scientific Investigation**

The shift toward silent reading and away from elocutionary texts began late in the 1800s and was reinforced by experimental evidence, which found that children understood text more easily when they read it silently rather than aloud (Gray, 1917). Readers such as *The Silent Readers* (Lewis & Rowland, 1920) invoked the studies of Starch (1916), Judd (1916), Courtis (1917), Monroe (1918), Kelly (1916), and many others to support the importance of silent reading.

The content of readers also shifted during the 1930s, as fairy tales began to give way to more realistic stories of children at home and play. Publishers used
the work of Thorndike (*The Teacher’s Word Book*, 1921) and Gates (*A Reading Vocabulary for the Primary Grades*, 1926) as sources for the words they included in their beginning readers. This resulted in more rigorous vocabulary control, a move which publishers referred to as “scientifically controlled vocabulary” (Mavrogenes, 1985, p. 266).

Also during the 1930s, the teaching of reading began to develop as a separate professional field. Books for teachers of reading gained in popularity, including *The Prevention and Correction of Reading Difficulties* by Emmett Betts (1936) and *Remedial Reading* by Marion Monroe and Bertie Bachus (1937). Reading research and reading pedagogy were linked by scholars such as William S. Gray, of the University of Chicago, who along with William H. Elson co-authored the Scott, Foresman series (Mavrogenes, 1985). Gray later served as senior author of Scott, Foresman’s Basic Readers from 1940 to 1948. This series, commonly known as the “Dick and Jane” series, was centered on white, suburban, middle-class families and their pets, Spot and Puff. The series came with guides for teachers, scripted lessons, supplementary materials and word lists in the back of each book. Although phonics played a role, the series took a predominantly whole-word approach to reading.

This word method was aggressively challenged in Rudolf Flesch’s (1955) book, *Why Johnny Can’t Read and What You Can Do About It*. Flesch’s solution: teach phonics! From Flesch’s (1955) perspective, “The teaching of reading—all over the United States, in all the schools, in all the textbooks—is totally wrong and flies in the face of all logic and common sense” (p. 2). Flesch described the word method as one in which words were learned via “endless repetition” and he characterized the series about Dick and Jane as “horrible, stupid, emasculated, pointless, tasteless little readers” (pp. 6-7). With language such as this, it is no wonder that a reading “war” erupted. This acrimony, which involved not only pedagogical differences but also the expensive reading programs that aligned with those differences, continues to today.

Despite Flesch’s (1955) admonition to teach phonics, “most schoolchildren in the United States [were still] taught to read by...a meaning-emphasis method” during the next decade (Chall, 1967, p. 256). In order to resolve the debate about learning to read, Jeanne Chall, a respected Harvard researcher, conducted a systematic analysis of reading research and programs. She concluded that a code-emphasis method produced better readers “not only in terms of the mechanical aspects of literacy...but also in terms of the ultimate goals of reading instruction—comprehension and possibly even speed of reading” (Chall, 1967, p. 307). In addition, however, she also concluded that language, good teaching, and appropriately-leveled
instructional materials were important factors in developing successful readers. The stirrings of “balance” were evident.

While the methodology debate stole center stage, a truly significant change occurred more quietly in 1965: A minority family finally appeared in a basal reading program. Soon after the first African-American family moved into a Scott, Foresman neighborhood, Ginn, the second most widely sold basal reading series followed suit, and African-American children began to appear on their playgrounds in 1966 (Barry, 2007). These two publishers, Ginn and Scott, Foresman, accounted for about 80 percent of total reading-series sales so the effect was pervasive (Chall, 1967). A focus on difference in skin color represented one of the shifts in values across a century of reading textbooks. According to Andrews’ (1995) analysis of the top seven basals in use in US public schools from 1895-1995, the average reader of 100 years ago emphasized “virtue, honesty, obedience, and purity” (p. 2). By the mid-nineties, those values shifted to “good self-concept, appreciation of difference and regard for nature” (Andrews, 1995, p. 2). Andrews (1995) also identified a quantitative shift in values as she noted that “some value was taught in approximately 65% of the selections” during the latter 1800s whereas the average number of selections containing values in 1995 was 35% (p. 2).

Basals continued as a primary component of classroom reading instruction and the 1970s actually saw an “overemphasis on drill and workbooks” (Ravitch, 2000, p.444). Therefore, enthusiasm for a meaning-centered approach, using children’s literature, authentic texts, and teacher empowerment was an understandable reaction, especially for those committed to progressive educational ideas. This other view of reading came to be known as whole language.

Whole Language

Yetta Goodman (1989) placed early use of the term whole language in a description of paradigms by Harste and Burke (1977), where, Goodman explained, one of the paradigms was called a “whole-language view of reading” (p. 115). Goodman watched as the grass-roots appeal of this paradigm spread and Missouri teachers formed the first support group in 1978 under the name Teachers Applying Whole Language. Yetta and her husband, Ken Goodman, further developed the concept in a 1979 paper titled, “A Whole Language Comprehension-Centered Reading Curriculum.” In What’s Whole in Whole Language, Ken Goodman (1986) explained how this approach differed from others. He believed that phonics and word advocates missed how readers construct meaning from language. Both methods treat all words as equally important, and both limit the learners to cues within
words rather than to cues in their transactions with connected discourse—the whole flow of language. The debate had shifted from phonics versus whole-word to phonics versus whole language.

An international teacher-support group for whole language sprang up in Canada and began presenting whole-language workshops in 1980. Professional organizations like the National Council of Teachers of English and the International Reading Association also contained many vocal advocates. “For a time,” reflects Ravitch (2000), “it seemed that whole language would sweep the reading field and reduce the opposition to a footnote in the history of education” (p. 446).

One of the problems the whole language movement constantly faced, however, was a lack of consensus as to its definition and even whether it was an approach, method, model, theory, philosophy, or movement. To solve the problem, Bergeron (1990) analyzed the existing literature pertaining to whole language to compile a definition. She concluded “no such definition was found to exist” (p. 318) and therefore constructed one:

Whole language is a concept that embodies both a philosophy of language development as well as the instructional approaches embedded within, and supportive of, that philosophy. This concept includes the use of real literature and writing in the context of meaningful, functional, and cooperative experiences in order to develop a student’s motivation and interest in the process of learning. (p. 319)

Whole language became politicized in 1988 when California State Superintendent Honig outlined a new initiative to guide reading instruction in California, the largest school system in the US. This revolutionary English-Language Arts Framework (1987) called for a shift in emphasis from skills-based reading programs to programs in which quality literature was the keystone. According to Ravitch (2000), “Honig did not realize that the state’s document was widely perceived as a great victory for whole language” (p. 446). The victory ended when California’s students scored near the bottom among 50 states on both the 1992 and 1994 National Assessment of Educational Progress (NAEP) assessments (Freeman, Freeman, & Fennacy, 1997). While causes for the decline were complex (minimal inservice, a lack of resources, confusion over concepts, a spike in the number of Limited English Proficient students, increased poverty) the nation perceived the decline as a direct result of whole language. California schools returned to a program of intensive, systematic phonics (Reading Task Force, 1995).

As questions and debate continued over the best method for beginning reading instruction, in 1997 the US Congress stepped in and asked the Director
of the National Institute of Child Health and Human Development (NICHD), and the Secretary of Education to appoint a panel of experts to determine the effectiveness of various approaches to reading (National Institute of Child Health and Development, 2000). The panel of 14 who were chosen sorted through 100,000 reading research studies to analyze those containing large sample sizes that were experimental in design and showed causality between practice and outcomes. Based on these studies, the Report of the National Reading Panel: Teaching Children to Read: An Evidence-Based Assessment of the Scientific Research Literature on Reading and Its Implications for Reading Instruction (NICHD, 2000) was produced. It concluded that effective reading programs should include instruction in phonemic awareness, phonics, fluency, vocabulary and text comprehension. At about this same time, the National Research Council also convened a distinguished group of researchers, chaired by Catherine Snow of Harvard (Snow, Burns, & Griffin, 1998). The panel concluded that beginning readers need “explicit instruction and practice that lead to an appreciation that spoken words are made up of smaller units of sounds...sight recognition of frequent words, and independent reading, including reading aloud” (Snow et al., 1998, p.7); in other words, a balanced approach to reading. As a matter of fact, this group saw their purpose as providing an “integrated picture of how reading develops” (Snow et al., 1998, p. 2), with the hope that their report “may indeed mark the end of the reading wars” (Snow et al., 1998, p.vii).

**Summary**

The purpose of this article was to address both national and state requirements that educators know the historical antecedents of reading methods and materials, and the values they conveyed. Understanding this history allows one to see how the field arrived at its current position, advocating for a balanced approach to literacy. Additionally, historical knowledge allows reading educators to view the progress made in literacy instruction over time.

Moore, Monaghan, & Hartman (1997) put forth “values of literacy history” in which they state, “a common rationale for history is that people can learn from the past. This rationale has always appealed to me; it implies that history can speak to practical matters” (p. 90). A very practical matter addressed here is effectiveness: what worked and what did not work in teaching children to read. For example, the alphabet method, a rote, oral, spelling approach to reading, used during the Colonial period, was discontinued. This change occurred during the 1800s because
of a shift in society’s attitude toward childhood and because educators concluded that rote memorization without meaning was not effective.

Progress continued during the latter 1800s and 1900s via word, sentence, and story methods of reading instruction. Variations of these concepts moved in and out of popularity, coalescing during the 1970s into a more comprehensive concept known as whole language. This philosophy and approach was designed to allow readers to make use of their transactions with connected discourse.

Other attempts at improving reading instruction came in the form of phonics approaches—invented, diacritical markings and synthetic. These phonic variations were originally implemented in the mid 1800s in order to be more scientific about reading instruction, to bring logic to our confusing English orthography, and to provide children with a tool for self-help. Invented or nontraditional phonics approaches did not work due to cost, lack of support, and the confusion involved in learning two systems. These were therefore discontinued. Synthetic phonics and later analytic and analogic variations, have continued for well over a century. Also maintained since the 1800s was the debate over best practice: phonics versus whole word and then phonics versus whole language. Again, it seems to have taken too long to get to the logical conclusion to integrate multiple approaches, using what works at each stage of development.

The content of reading materials changed significantly from the colonial era as ideas of developmental appropriateness replaced the drive to save a child’s blemished soul. Texts shifted the values they conveyed from religious to secular and stories became more inclusive of both race and gender. High-quality illustrations and the use of color were incorporated to enhance interest and understanding. Including comprehension as a skill to be taught and learned was a novel idea for the readers of Worcester (1826) and McGuffey (1837).

Scientific investigations in the early 1900s caused a change from oral to silent reading. Choosing oral or silent approaches, phonics or whole words, is thankfully, now the purview of the teacher. The teacher as professional and the rise of reading as a separate professional field is another example of progress made. Of course, part of professionalized development is knowing the history of one’s field. Due to this professionalization we acknowledge that it is the teacher, and not the material, that is the key to quality instruction. Therefore, a plethora of research-based resources currently exist to help educators decide what works for each child. Deciding how to balance instruction is, indeed, complex.

Effective balanced instruction requires a very comprehensive, integrated approach, demanding that teachers know a great deal about literacy
research related to emergent literacy, assessment-based instruction, phonological and phonemic awareness, the alphabetic principle, phonics and word study, selecting appropriate leveled readers, reader response, writing process, and constructivist learning. (Cowen, 2003, p. 2)

If we are in a position not to repeat the mistakes from our past, we have the opportunity to put our energies into tackling problems not yet solved.

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**Children’s Readers Cited**


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An Exploration of University Students’ Spelling Abilities

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Abstract

This study includes a spelling inventory and attitude survey that were administered to pre-service education undergraduates. Analyzed using traditional performance levels as guidelines, no students scored at an independent level, 71% scored within an instructional level, and 29% scored at a frustration level. Inventory results and survey comments demonstrated the students’ heavy reliance on letter/sound correspondences to guide their attempts at spelling. The majority commented that, as a teacher, they would help struggling spellers by telling them to “sound out the word.” Results suggest that, as future teachers, pre-service students must be instructed beyond the alphabetic stage and shown how to explore the pattern and meaning layers of English.

Research on various aspects of children’s spelling development spans decades of inquiry (Allal, 1997; Bear, Invernizzi, Templeton, & Johnston, 2004; Beers & Henderson, 1977; Fresch, 2005; Fresch, 2000; Henderson, 1985; Perfetti, Rieben, & Fayol, 1997; Read, 1971; Templeton & Morris, 2000; Zutell, 1979). Stages or phases of spelling development progress as students’ experiences and knowledge of English orthography increase. Each stage has identified characteristics of development that lie along a continuum and individual development of understandings about the language occurs at different rates. Some children move along quickly, using reading and writing instruction to inform spelling development (Bear, et al., 2004; Zutell & Rasinski, 1989) while others struggle depending on a variety of issues including instructional approach (Gill & Scharer, 1996; Morris, Blanton, Blanton, & Perney, 1995) and individual experiences such as vocabulary development (Zutell
& Rasinski, 1989). “The evidence that adult learners do follow a developmental pattern of spelling acquisition and that this pattern is very similar to that of children is important for the planning of assessment and instruction” (Viise, 1996, p. 577).

Without a doubt, lexical knowledge amassed by reading experiences influences adult spellers’ performance. Writers may attempt to spell a word based on a known spelling pattern, or rule, and then access their lexical knowledge to proofread the attempt (Burt & Fury, 2000). While the importance of adult reading experiences cannot be underestimated, the need for phonological and morphological knowledge is apparent (Burt & Fury, 2000; Shankweiler, Lundquist, Dreyer, & Dickinson, 1996). “It is accepted by most developmental researchers that deficits in phonological processing are fundamental impairments of children’s reading and spelling development” (Burt & Fury, 2000, p. 5). Hughes and Searle (1997) argue that one must continue developing to move beyond phonological processing. The speller must “work consciously to understand, master, and integrate the various logics that together constitute English: sound, look, and syntactic and semantic meaning. We cannot overemphasize the importance of this change in thinking about spelling to the long-term development of spelling ability” (Hughes & Searle, 1997, p. 30). Research has demonstrated that gaps in this continuum of development may continue to trouble spellers later in life (Bennett-Kastor, 2004; Holmes & Castle, 2001; Holmes & Malone, 2004; Schlagal, 1992).

While research on adult spellers does exist (Hanlon & Cantrell, 1999; Krashen, 1993; Massengill, 2006; Viise, 1996), authors of these studies generally work with spelling challenged adults. As researchers provide experiences in developing spelling knowledge, they must first acknowledge attitudes, such as embarrassment and frustration, of the research subjects acknowledging that issues of self-concept can interfere with adults’ attempts to learn new spelling strategies (Massengill, 2006). Ideally, being aware of the attitudes of adults provides guidance in designing instruction. Chandler (2000) used data from student surveys to drive her redesign of spelling instruction at the secondary level. Her exploration of the students’ knowledge and attitudes about spelling provided direction in helping to improve their writing skills. Chandler (2000) states, “when we hold secondary students accountable for poor spelling but do not provide any deliberate instruction regarding how to become better spellers, we abdicate our absolutely essential responsibility to help all writers in our care move forward from wherever they may be in their development” (p. 94).
Current Study

This study is a preliminary step in recognizing the needs of adult spellers in a university setting. The participants of this study have a pending, important role in society as they are education majors. As pre-service teachers, they are key to future generations of literate adults. Recognizing their skills and attitudes about spelling is essential to their development as teachers and surveying them provides guidance for spelling instruction that may be needed before they become in-service teachers. The questions for the study were:

- How well do adult students perform on an inventory of age-appropriate spelling patterns?
- What are adult students’ perceptions of themselves as spellers?
- What strategies do adult students claim to use when spelling unknown words and are these demonstrated in their inventory performance?

Methodology

Participants

Participants were seventeen students enrolled in Writing Course in the Elementary Education Major, a required part of the education major at a large mid-western university. All students were either junior or senior status in the undergraduate, non-certifying program as a graduate degree program provides methods courses to meet the requirements for state licensing. Students who complete their undergraduate degree and then apply for the Masters of Education program must have a 3.0 grade point average to qualify. The selection of this one class was based on availability of a content related course (writing) for only education majors, the instructor’s willingness to include the research as part of her course with undergraduates, and the fact that the course is offered by her once a year. Considered by the instructor and myself as an exploratory study, the results will guide our future research and course content.

Students were given a spelling inventory of 25 words (See Table 1). Following the inventory, the students completed a survey of eight questions regarding their attitudes about spelling (See Table 2). Thirteen students provided their age, which ranged from 21 to 50, with a mean age of 24. Two respondents were male, 15 were female.
Table 1. Spelling inventory

<table>
<thead>
<tr>
<th>Word</th>
<th>Target spelling feature</th>
<th>Feature score</th>
</tr>
</thead>
<tbody>
<tr>
<td>poignant</td>
<td>Diphthong</td>
<td>3</td>
</tr>
<tr>
<td>premonition</td>
<td>Prefix, suffix</td>
<td>4</td>
</tr>
<tr>
<td>commiserate</td>
<td>Doubling consonant as syllable juncture</td>
<td>4</td>
</tr>
<tr>
<td>conspiracy</td>
<td>Vowel alternation</td>
<td>3</td>
</tr>
<tr>
<td>designation</td>
<td>Consonant alternation</td>
<td>4</td>
</tr>
<tr>
<td>irascible</td>
<td>-ible, -able variations</td>
<td>4</td>
</tr>
<tr>
<td>irreplaceable</td>
<td>Absorbed/assimilated prefix</td>
<td>4</td>
</tr>
<tr>
<td>digresses</td>
<td>Plurals</td>
<td>3</td>
</tr>
<tr>
<td>credence</td>
<td>Derivations</td>
<td>2</td>
</tr>
<tr>
<td>earring</td>
<td>Compound word</td>
<td>2</td>
</tr>
<tr>
<td>cymbal</td>
<td>Homonym</td>
<td>2</td>
</tr>
<tr>
<td>bombard</td>
<td>Consonant alternation</td>
<td>2</td>
</tr>
<tr>
<td>partisan</td>
<td>Vowel alternation</td>
<td>3</td>
</tr>
<tr>
<td>illicit</td>
<td>Absorbed/assimilated prefix</td>
<td>3</td>
</tr>
<tr>
<td>illegible</td>
<td>-ible, -able variations</td>
<td>3</td>
</tr>
<tr>
<td>metacognition</td>
<td>Prefix</td>
<td>4</td>
</tr>
<tr>
<td>epiphanies</td>
<td>Plurals</td>
<td>4</td>
</tr>
<tr>
<td>their</td>
<td>High frequency</td>
<td>1</td>
</tr>
<tr>
<td>matriarch</td>
<td>Derivations</td>
<td>3</td>
</tr>
<tr>
<td>efficacy</td>
<td>Changing consonant sound (/k/, /s/)</td>
<td>4</td>
</tr>
<tr>
<td>therefore</td>
<td>Compound word</td>
<td>2</td>
</tr>
<tr>
<td>annoyance</td>
<td>Diphthong</td>
<td>3</td>
</tr>
<tr>
<td>plausible</td>
<td>-ible, -able variations</td>
<td>2</td>
</tr>
<tr>
<td>condemn</td>
<td>Silent consonants</td>
<td>2</td>
</tr>
<tr>
<td>judgment</td>
<td>Suffix</td>
<td>2</td>
</tr>
</tbody>
</table>
1. Do you think of yourself as a good speller? Why or why not?

2. How did you learn to spell?

3. As a young person, when you had questions about how to spell a word, what advice were you given? Was this advice helpful? Do you still use that advice today? Why or why not?

4. As an adult, when you are writing and come to something that you can’t spell, what do you do?

5. Who is a good speller that you know?

6. What makes this person a good speller?

7. If you knew someone was having trouble with spelling, how would you help?

8. What would you like to do better as a speller?

The Spelling Inventory

To gain information regarding students’ spelling abilities, an inventory was designed to observe “on the run” strategies, or attempts made without assistance of Spell Check or a dictionary. The inventory (See Table 1 for words and features) was based on work by researchers of older students that delineate the word features with which mature spellers should be familiar (Bear, et al., 2004; Fresch, 2002; Goodman, Watson & Burke, 2005; Templeton, 1983; Westwood, 1999). Words were selected to fit these spelling features with some of the words being chosen for their appearance in current assigned readings and high frequency use in college level work. For instance, in education courses, terms such as efficacy, metacognition, and illegible often appear in assigned readings. Current event discussions include partisan, judgment, and irreplaceable. The words were pronounced, used in a sentence to provide context, and repeated. The entire list was reread, and any students requesting a repeated word could also hear the context sentence again.
The Survey

The Burke Reading Interview (Goodman, et al., 2005) was used as a framework for developing the survey questions with the questions based on spelling rather than reading. The eight questions were designed with the help of the writing course instructor (See Table 2). Both the instructor and I had vested interests in understanding the skills and attitudes of these students. As the instructor for several of the graduate level reading methods courses, I wanted to be certain we both addressed these students’ needs before their student teaching experience. In particular, I am responsible for a phonics course the students take during one of their three quarters of method courses. Consequently, information gathered in the survey and performance on the spelling inventory could help with future instructional planning for the phonics course. The instructor of the writing course voiced a concern similar to Chandler (2000) knowing that simply marking their incorrect spellings does little to instruct. Her desire was to provide more informed comments when evaluating students’ written assignments. Number four of the survey asked students, “As an adult, when you are writing and come to something that you can’t spell, what do you do?” Responses to this question could then be compared to the observable performance on the inventory.

Data Analysis

Two sets of criteria were used to score the inventories. First, a student was given a quantitative score for percent correct and this percentage identified each respondent’s level of performance. Using traditional guidelines (Henderson, 1985) for distinguishing levels, any student scoring 50% or less was considered to be operating in the frustration range, between 50% and 80% as instructional range, and above 80% as independent range (cf. Morris, Nelson, & Perney, 1986).

Second, a qualitative score reflected specific differences in types of spelling errors made by students. A number of scoring guides exist similar to the one used in this study (Morris, et al., 1986; Shankweiler, et al., 1996; Worthy & Viise, 1996). These guides assign a numeric value to a spelling feature within a word. However, these tend to target only one feature in each word. For example, a word targeted for an assimilated prefix such as in irreplaceable, would be scored one point if the “irr” is correct, regardless if the speller chose to spell the word irreplacible. To provide a broader picture of the speller’s strategies, multiple features were analyzed as a feature analysis score was created for each word, depending on the patterns
An Exploration of University Students’ Spelling Abilities

it contained (Bear, et al., 2004). Irreplaceable contains an assimilated prefix (ir), a root word (replace), retention of the “e” to maintain the “soft” sound of “c” when adding a suffix beginning with “i”, and a suffix (-able). One point was awarded for each correct feature in the student’s attempt, so irreplaceable was worth four points. The scoring points are provided next to the inventory words in Table 1.

Using this second criteria allowed degrees of correctness to be recognized. That is, using this scale allowed analysis of more (or less) effective strategies in attempting to spell an unknown word. A total of 73 feature points indicated all features in all the words were correct. This scoring also accounted for students who missed the same words, but used different strategies in their attempts. Thus, with a word such as irreplaceable, scores could range from zero to four, which would demonstrate student knowledge of each feature. The individual word scores provided a more accurate picture of the students’ strategies.

Survey responses were searched for categories of similarity and each question was read and coded. For example, question one asked if the respondent thought he or she was a good speller. While the responses were either No or Yes, each one had a qualifying comment following the level of agreement. So, “no, I have always struggled” was given a one and “yes, I’ve always done well in spelling” was given a five. Remaining comments were then placed along a continuum of agreement and scored from one to five. This approach for categorizing each set of answers was completed for all eight questions.

Results

Overall performance on inventory

The students’ inventory and feature analysis scores are displayed in Table 3. Inventory scores ranged from eight to 18 correct (of a possible 25), with a mean score of 14.5 correct. Percent correct ranged from 32% to 72%, with 58% as the mean. No students scored at the independent level (80% or above). The majority of the students (71%) scored within the instructional level (50 – 80%). More than one-quarter (29%) of the students scored within the frustration level (below 50%). The features scores ranged from 43 to 65 (of 73 possible points), with a mean score of 58 points. Percent correct ranged from 59% to 89%, with 79% as the mean. Figure 1 displays the percent correct on the inventory compared to the percent correct of features.
Table 3. Performance on 25 word spelling inventory

<table>
<thead>
<tr>
<th>Student ID#</th>
<th>Raw inventory score (Of 25)</th>
<th>Percent correct</th>
<th>Raw feature score (Of 73)</th>
<th>Percent correct</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>8</td>
<td>32</td>
<td>43</td>
<td>59</td>
</tr>
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<td>2</td>
<td>10</td>
<td>40</td>
<td>53</td>
<td>73</td>
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<td>40</td>
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<td>71</td>
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<td>48</td>
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<td>74</td>
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<td>12</td>
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<td>71</td>
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<td>11</td>
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<td>12</td>
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<td>68</td>
<td>61</td>
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<td>18</td>
<td>72</td>
<td>62</td>
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<td>15</td>
<td>18</td>
<td>72</td>
<td>64</td>
<td>88</td>
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<tr>
<td>16</td>
<td>18</td>
<td>72</td>
<td>64</td>
<td>88</td>
</tr>
<tr>
<td>17</td>
<td>18</td>
<td>72</td>
<td>65</td>
<td>89</td>
</tr>
<tr>
<td>Mean</td>
<td>14.5</td>
<td>58</td>
<td>58</td>
<td>79</td>
</tr>
</tbody>
</table>

Figure 1. Comparison percent correct for inventory and features
In analyzing the scored attempts, students scoring within the frustration range appeared to use only sounding out as a strategy, whereas students at the upper end of instructional level used sounding and some morphological information in their attempts. For example, students in the frustration range wrote *irascible* as *ires-able*, *eraassable*, and *uraziable*. Examples of student attempts in the instructional range were *irrasible* and *irrassible*. None of the frustration level students used the *–ible* ending, and appeared to be most influenced by trying to represent exact letter/sound relationships. The majority of the instructional level students used *–ible*, appearing to understand how to add this ending to a word stem or root.

*Designation* was the only word all 17 students spelled correctly. This word has a high letter/sound relationship match. Other words that were correctly spelled by 90% or more of the students were:

- *earing* (94%), with only one student spelling it *earing*,
- *bombard* (94%), with one student spelling it *bombared*,
- *metacognition* (94%), spelled once as *medacognition*, and
- *their* (94%), with one incorrect spelling of *there*

Patterns of common errors were *condem* for *condemn* (thus missing the silent consonant pattern), and *creadance*, *creadance*, *credance* for *credence* (all using the *–ance* ending instead of *–ence*). Various errors were made with *premonition* with all students correctly writing the first target pattern, the prefix *pre-* and most students having the last target pattern, *–tion*, correct. Two students chose *–sion*, and one each wrote “*science*, “*shen*”, and “*cion*.” However, the middle two syllables caused considerable difficulties. The most common error was to choose “*–min*” as the middle syllable that contained the schwa sound (the vowel in the unstressed syllable). Students in the frustration level wrote *premanision*, *premenition*, *prenescience*, *preminicion*, and *premanition*. Students in the instructional range wrote *premonition* (most common choice), *premenision*, *premenishen*, *premenition*, and *preminission*. While the schwa sound is difficult to predict, proofreading the errors apparently did not help the students self-correct more obvious errors (i.e. the */sh∂n/ sound at the end of words is not spelled “*shen*”). While this word may be one the students have heard, their exposure to it in print may be minimal.

A word with multiple challenges for the students was *illegible*. Attempts included *elledgeable*, *illegeble*, *illegable*, *eledgable*, *illedgeable* and *eligible*. Many of these attempts, used by more than one student, ignored one or more of three patterns contained in the word: assimilated prefix, root word (*leg-* from Latin *legere* “to read”), and suffix (*–ible*). Students in the frustration range were more likely to begin the word with *el-*, thus demonstrating an insecure knowledge of variations of the assimilated *in-* prefix and a reliance on their ear to provide information. The use
of -ledge for the middle sound showed an unawareness of this word’s relationship to legible, a word they may see quite often in writing course rubrics.

Another challenging word was commiserate as only four of the 17 students spelled it correctly. The most common error was to spell the word with only one /m/. This error showed an understanding of the surface structure of the prefix, but not the deep structure knowledge of the prefix and base word. The prefix com-, attached to a form of misery would require both /m/. Ear dominance was also evident with the higher scoring students (64%, 68%, and 68% correct) when a “z” was used to represent the /s/. Students at the frustration level had attempts such as commesurate, and commissorate, again showing unawareness of the relationship to a similarly spelled base word.

The relationship between a student’s raw inventory score and raw feature score was tested for significance. Using Pearson r, a significant relationship (+. 94) was found (p < .005). Not surprisingly, the students who correctly spelled more words attained higher feature scores. The students at the higher end of the instructional range also scored more feature points for words missed than students in the lower levels. That is, two students might have both missed efficacy (worth “4” feature points), but lower level student scored one point for spelling it ephacacey and the higher level student scored three points for writing effacacy. Such differences in the students’ attempts were observed in many of the three and four point words.

**Responses on the Survey**

All students scoring in the instructional range believed they were fairly good spellers. Of the five students in the frustration range, only one commented on struggling consistently with spelling, and the others rated themselves as average spellers. When asked how they learned to spell, 59% noted through sounding out words and 29% by memorizing for spelling tests. The student who scored the highest, noted that reading helped her learn to spell.

When asked what advice they were given when they needed help with spelling, 65% responded they were told to sound it out and 47% said they were sent to a dictionary (two students suggested both). But Respondent S12 did not believe the advice to use a dictionary was helpful. She stated:

My teachers always told us to get a dictionary and look it up. We always asked them “if we don’t know how to spell it, how are we going to find it?” Their plan worked for words that weren’t too tricky (the ones that didn’t have too many silent letters). I don’t use the advice any more, because if I spell something wrong the computer usually catches it.
In responding to the second part of Question Three, which asked if they still use the advice they were given when young, the majority of the students said they used what they were taught. Sounding out was still used by 65%, dictionaries were still used by 18%, but 18% said they no longer use the advice they were given and instead rely on Spell Check. As Respondent S5 explained regarding what advice she was given and what she still does, “Sound it out! This does not always work. I do use this advice but it does not help that much, I do it because it’s the only way I learned.” Many talked about the problems sounding out presents:

- Sometimes it is useful, but the English language is sometimes more complex than just “sounding it out” (S3);
- ...but now I am aware of more tricky letter combinations (S10);
- It does work but not in all cases.

When asked what they do when they are writing and cannot spell a word, 65% noted they would use the Spell Check feature on a computer. Respondent S7 seemed frustrated by this approach as when she “sound[s] out the word or if a computer is near I use it. I use Dictionary.com or Spellcheck. It is a shame that I need a machine to help me spell, but how else can I learn to spell? Isn’t it a little late?” Other approaches used by the students were looking in a dictionary (41%), write the word then look at it for correctness (24%), and sound it out (12%). Sounding out, the method they most often learned and had been given as help when they were young, was the one they claimed to employ the least. There seemed to be a discrepancy between Question three (65% sound it out) and Question four (65% use Spell Check), which may well be due to the amount of writing done on the computer for college work. In order for students to allow the Spell Check to “help” them, they must sound out the word and then compare alternative spellings to correct their attempt. Therefore, sounding out appeared, in actuality, to be the most relied upon strategy.

All but one student could name someone who was a good speller. These varied from grandparent and parent (35%), friend or spouse (24%), to teachers (18%). The respondents believed these people were good spellers because they were smart or had a good “sense” about words (71%) or that they read and write a lot (29%).

When asked how they might help someone who was having trouble spelling a word, 59% responded they would tell the person to “sound it out.” Many of the respondents had similar answers as S1, who stated, “tell them to listen to the sounds the letters make when you say them. Also breaking the letters down into syllables, which make the word easier to spell.” Telling the speller to go to the dictionary was chosen by 35% of the respondents and 12% would just tell them...
how to spell the word. One respondent would tell the troubled speller to get to know and understand prefixes and word histories (this person scored 60% on the spelling inventory). Another respondent who scored 72%, wrote she would tell the person to read more and do “fun things” with words such as crosswords. Only one respondent was unsure how she would help a troubled speller.

The last question on the survey asked the respondents what they would like to do better as a speller. Each respondent had very specific ideas about what he or she wanted to improve. These responses included improve their vocabulary (29%), memorize the spellings of more words (29%), more accurately recognize sounds and the rules that govern words (18%), be less dependent on Spell Check (12%), and be more consistent (12%). Respondent S4 described what she would like to do better as, “words that I constantly mis-spell [sic] I would like to memorize, so I don’t have that problem because if I’m leaving a quick note and am not using the computer, Its [sic] embarassing [sic] to mis-spell [sic] words.”

The survey responses gave a glimpse into the students’ perception of themselves as spellers. Two strategies were most often noted: sounding out and using a dictionary. Students also noted the problems with these two strategies as sounding out only works if the letter/sound relationship is unquestionable. That is, words with silent letters, or “tricky” combinations cause problems when the student relies on sound. Dictionaries are a problem if you do not already know the word well enough to locate it. An incorrect guess at the beginning sound makes it nearly impossible for finding the word in the dictionary. For example, misspelling for words such as irascible, illicit, illegible, and epiphanies would have presented such a challenge for nine of the seventeen students. Only one student seemed to have an idea of how to help someone else beyond “sound it out.” This student suggested knowing word parts, such as prefixes and suffixes might help. Ultimately, the results suggest these students have limited strategies to help them spell challenging words.

Alignment of Performance and Perception of Self

Across the survey, students generally stated that they sounded out words when spelling. Their performance on the inventory showed that students did sound out to spell words with which they were unfamiliar. Some students had better attempts than others as sounding out illegible and then writing elledgeable versus illegable shows considerable differences in what each student might know about prefixes, bases, and suffixes. Choosing to spell irascible as uraziable and epiphanies as appifineise demonstrates the dominance of ear over eye. A few judgments can be made about these two students’ inability to proofread and recognize that their
An Exploration of University Students’ Spelling Abilities • 65

attempt does not look like any word they have seen in print. We can also be assured that they were, in fact, using a sounding out strategy to help write the words.

Question four would suggest that, although the students chose Spell Check as their main strategy, they must sound out the word in some way to allow the computer to search for a suitable match. Unfortunately, like the dictionary, writers must get “close enough” to have Spell Check help. To observe this, several of the students’ attempted spellings were put into Microsoft Word© to check for suggested corrections. After entering irascible as uraziable the Spell Check offered erasable, unreliable, reliable, eradicable, trainable, risible, resizable, and grasable. All a far cry from the intended word. Spell Check suggested that elledgeable (illegible) could be corrected as allegeable or enlargeable. Epahcacey (eficacy) produced the message, “no spelling suggestions.” With each of the sounding out approaches, problems persist for the students. Therefore, this study suggests students need more than just “sounding out” in their repertoire of strategies for spelling.

Discussion and Implications

To review, this study was designed to, in particular, inform the instructor of an undergraduate writing course and a professor of graduate level methods courses regarding strategies pre-service education students’ use when spelling. Words chosen for the inventory frequently appear in their education courses or other university course work. “Sound it out” was the single most utilized strategy students used to approximate the spelling of a word. Only one student thought about teaching prefixes or word histories to a troubled speller, another suggested playing word games and no other strategies were suggested.

Research Questions Answered

Three questions guided the study. First, we asked How well do adult students perform on an inventory of age-appropriate spelling patterns? and administered a spelling inventory. No participants were working at an independent level. Nearly three-quarters of the students (71%) were operating at an instructional level and the remaining students (29%) scored within the frustration range. While the words were drawn from current university work, how often the students have seen the word in print is unknown. Would they recognize the word in print, but not be able to recall it for writing? This question could be further explored by first giving the students a vocabulary test whereby the word is pronounced and used in a sentence to establish context. The students could then be asked to write a definition of the word which would provide a measure of listening vocabulary. Students might further be asked
to identify how they know the word (I have seen it in print, I have heard it in a lecture/discussion, I have heard it but cannot define it, I do not know the word). Several of the students commented on the survey about their desire to expand and improve their vocabulary. This, too, needs further exploration: Do they mean reading, writing, or listening vocabulary?

Second, we asked, What are adult students’ perceptions of themselves as spellers? This question was addressed through a short survey where all students were reserved in their self-assessment. Most of them believed they were “average” or “pretty good” spellers. One student in the frustration range noted that she struggled with spelling. The participants’ comments suggested that few felt confident in their spelling skills. Smith (2004) suggests that “spelling is conspicuous, and probably the only aspect of writing that most people feel competent to pass judgment on, so errors are treated almost as antisocial behavior” (p. 288). While there are 26 letters in the English alphabet, those letters combine to make from 40 to 44 different sounds (Fox, 2000; Henry, 2003; Savage, 2001). When strictly spelling by “ear,” inaccurate guesses can occur, and as student S4 put it “Its [sic] embarrassing [sic] to misspell [sic] words”.

Finally, we compared the inventory and survey results when we asked, What strategies do adult students claim to use when spelling unknown words and are these demonstrated in their inventory performance? Sounding out remained the most frequently used and discussed strategy. The students suggested Spell Check was their current way to correctly spell and, for many of the students, sounding out a word could produce a corrected match by Spell Check. For some of the students, however, Spell Check would not have helped them. Their “sounding out” strategy so closely linked letters and sound that they completely ignored any meaning based information that might produce a near correct spelling. Hughes and Searle (1997) claim that students who hang “onto sound as the overriding logic for their spelling cut themselves off from other knowledge that would help them to develop” (p. 30). Montgomery, Karlan, and Coutinho (2001) examined the dependence on phonetics to sound out a word and the usefulness of Spell Check. They found that “the spell check functions of word processors...were only able to identify the target word for 53% of misspellings” (p. 37). And, as Respondent S4 recognized, she will not always be working on a computer. She understood that as a teacher, she may need to handwrite a quick note and she was worried about misspelling a word.

This study suggests instruction that develops knowledge about the meaning-spelling connection of English words might be beneficial for developing strategies beyond “sound it out.” As Smith (2006) reminds us “another reason why spelling is not a direct reflection of the sounds of words is more fundamental. It is not basically the function of spelling to represent sound, but to represent meaning”
An Exploration of University Students’ Spelling Abilities • 67

(p. 36). Providing students with experiences in structural and meaning analysis could expand their repertoire of strategies (Henry, 2003; Massengill, 2006; Moats, 2005/2006; Templeton, 1983). This group of pre-service education students evidently needs to examine their understandings of the structure of the English language. In spelling unfamiliar words and in projecting how they would help a struggling speller they generally relied on the only strategy they knew, sounding it out. Many thought memorizing more words would make them better spellers and essentially, these students would teach others spelling they way they were taught. Changing understandings about how one learns to become an efficient speller and how a teacher approaches such instruction comes with preparation and a philosophical shift (Fresch, 2003).

Future directions of this study will provide students with opportunities to move beyond their reliance on the alphabetic nature of English and begin to construct knowledge about other layers of the language. An examination of the “pattern layer of information” (Bear, et al., 2004, p. 6) would extend the students’ current use of sound patterns to larger groupings of letters. For instance, the students who used “shen” to represent the /shɒn/ sound might investigate and sort words with -tion, -sion, and -cian. Beyond developing knowledge about these three patterns, students might also come to understand the ending is never spelled “shen.” Students might then move on to the “meaning layer of information” (Bear, et al., 2004, p. 6). An example of this layer is the errors made when spelling conspiracy. Examining words with vowel or consonant alternations demonstrate that sounds may shift, but meaning-related words maintain similarities in spelling. So, investigating words related in meaning to conspire could help students who spelled the middle syllable of conspiracy as “sper.” Developing the strategy to think of related words allows students to mediate their attempts beyond sounding out. While their spelling may not be completely correct, they may at least “invent” with thought. That is, to move beyond the sounding out strategy, students must think about what they know about the English language. They may then develop a spelling comprehension, or an understanding of the meaning of words beyond the alphabetic level.

This study has stimulated ideas for continued work and several follow-up studies have been suggested. What becomes apparent is students need multiple strategies for spelling. If they rely on Spell Check, then how might they make the best use of it? Would use of strategic attempts affect expansion of their spelling and vocabulary knowledge? Does having the ability to tap into such strategies add to their confidence level as spellers? Such questions continue to inform this line of inquiry.
References


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Students’ Perceptions of “Fun” Suggest Possibilities for Literacy Learning: “You Can Be Entertained and Informed”

Brandi Gribble Mathers, Ph.D.
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Abstract
Perhaps educators shy away from serious consideration of “fun” because the term is typically associated with the kinds of activities found on the playground rather than in the classroom. According to the first, third, and fifth-graders involved in this study however, different definitions of fun can be applied in different contexts and these definitions can be broad enough to include conditions specifically related to literacy activities. When these conditions are met, students do not regard reading and writing as work to be avoided, but rather, work to be embraced. Students revealed that fun motivates them to more willingly expend the effort necessary to read and write. Consequently, teachers should not only examine their own beliefs regarding the relationship between fun and learning, but should also engage in conversations with their students in an effort to make better use of the motivating power of “hard fun” in literacy learning.

What do you think of when you hear the word “fun?” Does reading make your list? What about writing? Do you associate writing with the word fun? Questions such as these point to broader issues regarding the nature of learning. For instance, should learning be fun? And if so, what, exactly, does fun look like in an academic setting? Much research exists which links learning to engagement (Baker, Dreher & Guthrie, 2000; Guthrie & Wigfield, 2000; Teale & Gambrell, 2007)—but what
about fun? Are learning and fun related? And if so, how? While such questions have important implications for the classroom, the notion of fun has received relatively little attention in the literature regardless of its consistent appearance in the everyday language of students. Perhaps because of its less-than-academic connotation, many educators shy away from a serious discussion of the concept. However, its frequent manifestation in the vocabulary of students warrants it significant consideration. Consequently, this study explores the relationship between students’ perceptions of fun and literacy learning.

My work was initially guided by two general research questions. First, I wanted to know how first graders’ beliefs about reading and writing compared with the beliefs of their third and fifth-grade counterparts. Second, I was interested in the reasons first, third, and fifth-grade students gave for these beliefs. As the research progressed, however, I became interested in the notion that literacy activities could be, in students’ opinions, categorized as either “fun” or “boring.” Consequently, my focus sharpened—I wanted to gain insight into students’ perceptions of these two descriptors as they related to literacy engagement.

### Conceptual Framework

Guthrie (2004) explains that “researchers use the term engagement to encompass many meanings” (¶ 8). One such meaning considers readers’ time spent on task. A second meaning of engagement refers to the strategic cognitive behaviors which allow readers to create meaning from text. Yet another meaning of engagement, as Guthrie (2004) explains, “emphasizes affect. In this case, such qualities as enthusiasm, liking, and enjoyment” come into play (¶ 8).

Teale and Gambrell (2007) highlight the affective aspect of engagement when they observe that engaged readers and writers use their literacy skills “for their own purposes, such as pleasure, engaging in social interchange, or satisfying curiosity” (p. 736). Goodman (1986) also underscores the importance of the affective aspect of engagement saying, “kids need to feel that what they are doing through language they have chosen to do because it is useful, or interesting, or fun for them” (p. 31). Arnold and Colburn (2004) corroborate, saying, “we think fun is a key word when it comes to early literacy” and, consequently, children should be given opportunities to experience “the joy of books” (p. 43). After all, as Compton-Lilly (2007) points out, “avid readers do not read to improve their ability to recognize sight words or to master phonics.” Rather, they do so “because they are engaged
You Can Be Entertained and Informed

•

in an activity that is not boring. They become engaged in virtual worlds that are compelling and interesting” (p. 722). In regards to writing, Moffett and Wagner (1993) explain that young children “don’t at first take up make-do writing primarily to communicate since they already can speak and they often can’t read back their own writing.” Rather, “they do it for fun...Letters are a new play medium” (p. 35). Smith (1982) also emphasizes the enjoyment factor, stating, “writing is something that everyone ought to be able to do and enjoy, as naturally as singing, dancing, or play” (p. 17).

The Demise of Fun

While Smith (1982) contends that writing is as enjoyable as singing, dancing and playing, he goes on to explain that

like singing, dancing, and play, writing may be one of those activities that all children enjoy—and enjoy learning to do better—until, all too often, they become discouraged or disinterested because something happens to inhibit their free and natural expression. And that something that happens can often be associated with education or training; it results in a loss of spontaneity, a painful self-consciousness of “error,” a reluctance to perform and learn because of a perceived inability to achieve certain extrinsic standards. (p. 17)

The work of Kear, Coffman, McKenna, and Ambrosio (2000) corroborates Smith’s sentiment as they report that students’ attitudes towards writing generally worsen as they move from grade to grade. The authors cite negative feedback, tedious writing assignments, and lack of choice as causes for this decline. Likewise, Shafer (2000) observes that the teacher-centered paradigm found in so many language arts classrooms “eventually makes the learner irrelevant because individual voices and goals become ancillary to those skills, those topic sentences that are supposedly paramount to a ‘correctly’ done essay” (p.30). Writing often becomes a tedious and painful process. Indeed, Nippold, Duthie, and Larsen (2005) report that the students in their research classified writing as one of their least preferred activities, alongside cooking, walking, and running.

Unfortunately, the outlook for reading is not much brighter. For instance, Wigfield et al. (1997) report that, across the elementary school years, students’ interest in reading declines. Similarly, McKenna, Kear, and Ellsworth (1995) report that, on average, students’ attitudes towards both recreational and academic reading
“begin at a relatively positive point in Grade 1 and end in relative indifference by Grade 6” (p. 952). Wigfield (2000) contends that “many children come to school optimistic about their skills, excited about being in school, and eager to learn to read.” He goes on to state, however, “these beliefs change for many children during the first few years of elementary school” (p. 141). Heins (1980) holds the routine of “school,” with its basal readers, responsible for this change. She believes the “unexciting, bland, and flavorless prose” found in many classroom-issued reading materials dampen children’s expectations and anticipations of the joy of reading (p. 261). Bean (2002) also implicates the educational system, stating, “schools often cling to badly outdated reading lists that convince adolescents that reading is boring and disconnected from their lives” (p. 264). Kraus’s (2006) research corroborates this notion as she reports that the children with whom she worked “seldom, if ever, experienced the printed word as fun.” Rather, “both in school and in after-school programs, reading was something you had to do rather than something you chose to do” (p. 414).

Can (and Should) Learning be Fun?

West (1994) reports that, while the children she interviewed felt both “work” and “fun” were important, “they clearly attached greater personal value to Fun” (p. 19). These students believed however, that their opinions existed in tension with those of their teachers: teachers, they believed, valued “work” over “fun.” West (1994) explains that, consequently, “in the world of school Fun was seen as a stroke of good fortune—a happy circumstance which delighted them, but which they really had no right to expect” (p. 19). Apple and King (1990) report a similar tension between children’s personal preferences and what they perceived to be valued by adults as the children in their research gravitated towards activities they categorized as “play,” while their teacher emphasized the importance of activities they classified as “work.”

Moffett and Wagner (1993) offer a possible explanation for this tension when they observe that “it’s hard for life-long readers and writers...to appreciate the marvel that children feel at first about converting speech and letters back and forth into each other” (p. 35). Adults must not forget, however, that “for the beginner, literacy is about secrecy and sorcery” and, perhaps, it is the existence of these magical qualities that makes reading and writing appealing to students (Moffett & Wagner, 1993, p. 35). West (1994) ponders this same possibility, suggesting, “perhaps students given long-term opportunities to experience literacy learning as Fun will be the ones
most likely to sustain their own instinctive love of learning” (p. 21). Gee’s (2003) work also points to the role of fun in the learning process when he writes, “children must be motivated to engage in a good deal of practice if they are to master what is to be learned. However, if this practice is boring, they will resist it” (p. 68).

So what is the relationship between fun and the development of a love for learning? How can educators find out? One way involves simply asking students. Unfortunately, however, little research exists which has examined children’s perspectives related to such issues (West, 1994). Pachtman and Wilson (2006) corroborate, pointing out that the voices most frequently heard in the research literature “are those of teachers, school administrators, or parents as opposed to those of the students” (p. 680). Fairbanks (1992) agrees, maintaining that educators seldom ask for and then actually listen to students’ feedback. Yet asking and listening would allow educators to adjust programs to better meet the needs of students (Stewart, Paradis, Ross & Lewis, 1996). Oldfather (1993) and Cole (2002/2003) also underscore the importance of honoring student voices, believing that such honoring can lead to improved teaching and learning.

My research acknowledged the aforementioned void by asking for and then listening to students’ opinions regarding reading and writing. To review, I was initially guided by two general research questions. First, how do first graders’ beliefs about reading and writing compare with the beliefs of their third and fifth-grade counterparts? Second, what reasons do first, third, and fifth-grade students give for their beliefs? As the research progressed, however, I became interested in the notion that literacy activities could be, in students’ opinions, categorized as either “fun” or “boring.” This indication sharpened my focus which led to exploring the relationship between these two descriptors and literacy engagement.

**Methods**

**Participants and Setting**

This study took place in a small urban district located in the northeastern United States. The district had an enrollment of approximately 1,900 students, kindergarten through twelfth grade with fifty-six percent of the students on free or reduced-cost lunch status. Sixty students attending classes in one elementary building within the district participated in this study. Eighteen students were members of a first-grade classroom, 15 were members of a third-grade classroom, and the remaining 27 students made up a fifth-grade classroom. Of the 60 participants,
52% were male and 48% were female. Fifty-two percent of the students were Black, 46% were White, and 2% were Hispanic.

**Procedures and Data Analysis**

This research took place in three phases. The first phase involved an in-class administration of a literacy questionnaire at each of the three grade levels. This questionnaire included 12 items, six of which dealt with reading, the other six with writing (see Figure 1). Students were directed to answer “yes” or “no” for each question. All 60 students completed the literacy questionnaire.

<table>
<thead>
<tr>
<th>1. Are you a good reader?</th>
</tr>
</thead>
<tbody>
<tr>
<td>2. Do you like to read?</td>
</tr>
<tr>
<td>3. Do you read at school?</td>
</tr>
<tr>
<td>4. Do you read at home?</td>
</tr>
<tr>
<td>5. Is reading important?</td>
</tr>
<tr>
<td>6. Is reading hard work?</td>
</tr>
<tr>
<td>7. Are you a good writer?</td>
</tr>
<tr>
<td>8. Do you like to write?</td>
</tr>
<tr>
<td>9. Do you write at school?</td>
</tr>
<tr>
<td>10. Do you write at home?</td>
</tr>
<tr>
<td>11. Is writing important?</td>
</tr>
<tr>
<td>12. Is writing hard work?</td>
</tr>
</tbody>
</table>

*Figure 1. Literacy questionnaire*

The second phase of the project involved individual follow-up interviews with 12 students: four at each of the three grade levels. Half of the 12 (two at each grade level) were chosen because their responses on the literacy questionnaire indicated that their attitudes about reading and writing were generally positive. The other half demonstrated predominantly negative attitudes. During the interviews, these students were asked to explain their answers. For example, if a student answered “yes” when asked “Do you like read?” the student was asked “Why do you like to read?” during the follow-up interview which was audiotaped and transcribed. A content analysis (Miles & Huberman, 1994) of the interview transcripts was then
conducted. This analysis focused on the reasons students gave for their beliefs about reading and writing. The transcripts of students’ interview responses were read and reread, allowing patterns to emerge. Ultimately, two themes stood out, thus forming a framework for coding and a database was organized for all coded responses. The patterns found in the coded responses piqued my curiosity about their continual use of the words *boring* and *fun* which led to more questions, and, consequently, the third phase of the project was conceived.

The third and final phase of the research involved brief individual interviews with all participants at each grade level asking them to provide reasons for answers they had given on the literacy questionnaire. For instance, a student who reported that he did not like to write was asked *why* he did not like to write. The difference during the third phase, however, was a focus on students’ spontaneous use of the words *fun* and *boring* in their explanations. When students used either of these words they were asked to elaborate. For example, if a student said she did not like to read because it was “boring,” she was asked, “*Why* do you think reading is boring?” As with the second phase, interviews were audio taped and transcribed and a content analysis of the transcripts was conducted (Miles & Huberman, 1994). Four of the original 60 participants had moved out of the district, so 56 students took part in this second round of interviews.

After considering the data in its entirety, information gleaned from six of the original 12 literacy-questionnaire items proved most germane in illuminating the relationship between students’ perceptions of fun and literacy learning. Consequently, this article focuses on a discussion of these six items.

**Results**

**Phase One: Literacy Questionnaire**

Table One summarizes the results of the in-class administration of the literacy questionnaire at the first, third, and fifth-grade levels. Results indicated that positive attitudes towards reading increased from first to third grade, however, these positive attitudes declined from third to fifth grade. For instance, when asked whether or not they liked to read, approximately 69% of the first-grade and 87% of the third grade participants answered “yes,” while 63% of the fifth graders answered in the affirmative. Attitudes regarding writing followed the same pattern: an increase in positive attitudes from first to third grade, but a decrease from third grade to fifth. For example, when asked if they thought writing was important, approximately 67%
of the first graders answered “yes,” while 100% of the third graders and 85% of the fifth graders responded in the affirmative.

Table 1. Percentage of Affirmative Answers at Each Grade Level (N = 60)

<table>
<thead>
<tr>
<th>Question</th>
<th>First n = 18</th>
<th>Third n = 15</th>
<th>Fifth n = 27</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you like to read?</td>
<td>68.75%</td>
<td>86.67%</td>
<td>62.96%</td>
</tr>
<tr>
<td>Are you a good reader?</td>
<td>62.50%</td>
<td>86.67%</td>
<td>59.26%</td>
</tr>
<tr>
<td>Is reading important?</td>
<td>87.50%</td>
<td>100%</td>
<td>81.84%</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you like to write?</td>
<td>94.44%</td>
<td>93.33%</td>
<td>51.85%</td>
</tr>
<tr>
<td>Are you a good writer?</td>
<td>83.33%</td>
<td>93.33%</td>
<td>66.67%</td>
</tr>
<tr>
<td>Is writing important?</td>
<td>66.67%</td>
<td>100%</td>
<td>85.19%</td>
</tr>
</tbody>
</table>

Phase Two: First Round of Student Interviews

In the second phase of the research, individual follow-up interviews were conducted with four students from each of the three grade levels. During these interviews, students were asked to discuss the answers they had given on the literacy questionnaire. Two themes emerged from the content analysis of the interview transcripts. First, standing in sharp contrast to one another were the ideas that literacy activities were either “boring” or “fun.” Students’ interview responses were peppered with these two adjectives. For example, when asked whether writing was important, a fifth-grade student responded, “No. It’s boring…it takes too much time at school.” When asked whether she liked to read, a first grader answered, “No...cause it’s boring.” When asked if he was a good reader, a third-grade participant responded, “Yes,” and went on to say that reading is “fun because you can learn a lot from books.” Another third grader explained that she liked to “write stories because it’s fun.”

The second theme that emerged highlighted the impact the opinions of “influential others” (Mathers, Kushner Benson, & Newton, 2006/2007, p. 294), including teachers, parents and peers, had on participants’ ideas about literacy. For example, when asked if he liked to write, a fifth-grader answered, “Yes,” explaining that this was due to the fact that “a lot of people say I am creative...teachers, my mom.” When asked if she liked to read, another fifth grader responded, “No,”
revealing, “People make fun of me when I read.” A third-grade student explained that he liked to write because “whenever I do writing projects and stuff, Mrs. Z. always says that she can hear my writing inside of it.” Finally, a fifth grader stated that he thought reading was important, explaining, “Every adult I talked to about this says that over the summer I should read.”

The results of this content analysis indicated clearly that influential others do impact students’ feelings regarding reading and writing. These findings led to questions regarding whether or not this influence could extend far enough to help convince students that literacy-related activities are not boring, but rather fun. A first step in answering these questions seemed to involve unpacking students’ use of these words. For instance, what, exactly, were students trying to say when they called reading boring? Or what did they mean when they said writing was fun? After this first round of interviews, more questions existed than answers, and thus, the need for a second round of interviews became apparent.

Phase Three: Second Round of Student Interviews

In the third and final phase of the research, brief individual interviews were conducted with all participants. As in the second phase, students were asked to provide explanations for the responses they had given on the literacy questionnaire. The difference during this phase, however, was an interest in students’ spontaneous use of the words “fun” and “boring” in their explanations. Table 2 outlines the percentage of students who spontaneously used either word as they discussed their opinions about reading and writing.

Table 2. Percentage of Students Who Spontaneously Referenced “Fun” or “Boring” in Phase Three Interview Response (N = 56)

<table>
<thead>
<tr>
<th>Reference</th>
<th>First n = 18</th>
<th>Third n = 12</th>
<th>Fifth n = 26</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reading</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reading is “fun”</td>
<td>50.00%</td>
<td>58.33%</td>
<td>15.38%</td>
</tr>
<tr>
<td>Reading is “boring”</td>
<td>5.56%</td>
<td>0.00%</td>
<td>3.85%</td>
</tr>
<tr>
<td>Writing</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Writing is “fun”</td>
<td>11.11%</td>
<td>33.33%</td>
<td>3.85%</td>
</tr>
<tr>
<td>Writing is “boring”</td>
<td>16.67%</td>
<td>0.00%</td>
<td>7.69%</td>
</tr>
</tbody>
</table>
From first grade to third, there was an increase in students’ use of the word “fun” and a decrease in their use of the word “boring.” Conversely, from third grade to fifth, there was a decrease in the prevalence of the word “fun” and an increase in the prevalence of the word “boring.” These percentages paralleled the pattern observed in students’ earlier literacy questionnaire responses as there was an increase in positive attitudes from first to third grade, but a decrease in positive attitudes from third grade to fifth.

A content analysis of the interview transcripts shed light on students’ perceptions of fun as they relate to reading and writing as three distinct aspects of fun emerged. The following section explains each in detail.

Fun: The entertainment factor. The first aspect highlighted the entertainment value associated with fun. Students were attracted to humor and frequently used the word “funny” to explain why they believed a literacy-related activity was fun. For example, in order to explain why he thought reading was fun, one third grader said, “You get to listen to all the funny things that the characters say.” A fifth-grade student also described reading as “fun,” and when asked why, answered, “You can kind of place yourself in the main character’s situation and sometimes there’s really funny parts and stuff like that.” A first-grade participant commented, “Sometimes you can read about fun things.” When asked to elaborate, she explained, “I read about a cow eating candy.” Finally, a third grader said writing was fun, and, when asked what made it so, responded, “Whenever you want to write a story you can make it funny, and whenever you read it you can laugh or keep it for a long time to remember things.”

Engaged readers and writers use their skills to satisfy their own purposes and one such purpose includes pleasure (Teale & Gambrell, 2007). The positive feelings student-participants associated with humorous texts motivated them to want to read, thus underscoring the importance of the affective component of literacy engagement (Guthrie, 2004). As a third grader explained, “I write funny stories because it makes me happy.”

Fun: The information factor. The second theme that emerged from the content analysis of the interview transcripts involved a connection between fun and reading-to-learn. For example, a third grader commented, “Reading is fun, and it helps me get my education.” When asked what she meant when she said reading was fun, a fifth-grade student explained, “It’s something you can do at any time and it is good for your brain.” Finally, when asked why he liked to read, a first grader replied, “Because it’s fun reading. You can learn things if you read.”
Students’ references to learning in association with fun highlighted yet another goal of the engaged reader, that of satisfying personal curiosity (Teale & Gambrell, 2007). Students classified reading activities as fun when they came away believing they had learned something. For instance, a third-grade student observed, “It’s fun to read if you learn.” Interestingly, however, while students frequently associated learning and reading, they did not make a connection between learning and writing.

Fun: The choice factor. The third theme that emerged involved the relationship between fun and freedom of choice in writing. For instance, a fifth-grade student explained that writing was fun because “you can write anything you want and make up your own stories.” Likewise, a third grader commented, “It’s creative and you can make up your own stuff instead of copying off of somebody else.” Finally, a fifth grader called writing boring and when asked to elaborate, he replied, “It’s the exact opposite of fun...sometimes you have to write stuff from an example...you can’t just make stuff up.” Later, the same student explained that writing can be fun when “you can add your own experience and everything into it.”

Students’ responses indicated that they valued the creative nature of writing. These responses echo Moffett and Wagner’s (1993) contention that writing is a “play medium” (p. 35). Furthermore, students were attracted to writing activities that gave them freedom of choice not only because the activities were pleasurable, but also because they afforded them the opportunity to satisfy their personal curiosity (Teale & Gambrell, 2007). For example, a third grader explained that writing was fun because when you write it “can be about anything you want or things you like.”

Discussion and Implications

Should learning be fun? The answer depends on who you ask. Lewandowski (2005), for instance, writes, “not all learning is fun. Some learning...requires hard work. Competence in reading, writing, and problem-solving builds on the acquired mastery of basics, the fundamentals that can only develop with student effort” (p. 26). The results of this study suggest, however, that fun and hard work do not have to be mutually exclusive; rather, fun may actually encourage higher levels of engagement and effort. Participants associated fun not only with being entertained, but also with gaining information and revealed that both aspects of fun motivated them to want to expend the effort necessary to read and write.
Papert (2002) makes a thought-provoking connection between fun and effort in his article titled, “Hard Fun.” In illustrating the concept of hard fun, Papert relays the story of a first-grader who was learning how to program a computer using the language Logo. The student is quoted as saying, “It’s fun. It’s hard. It’s Logo” (¶ 2). Papert contends that, once he became aware of the concept of hard fun, he found it cropping up everywhere. He suggests, the concept of hard fun is “expressed in many different ways, all of which boil down to the conclusion that everyone likes hard challenging things to do” (¶ 3). But, Papert warns, “They have to be the right things matched to the individual and to the culture of the times” (¶ 3).

Papert’s (2002) notion of hard fun echoes the views expressed by the students in the current research. Results indicate that, under certain conditions, these students did not regard reading and writing as work to be avoided, but rather, work to be embraced. One of those conditions involves humor. One student explained, “I write funny stories because it makes me happy.” Within the classroom, humor, and its motivating qualities, should be taken seriously. This might involve an examination and discussion of different techniques authors employ in creating humorous texts: exaggeration, irony, puns, and odd juxtapositions, to name a few. For instance, after comparing and contrasting Judith Schachner’s (2003) *Skippyjon Jones* with Doreen Cronin’s (2000) *Click, Clack, Moo: Cows That Type*, and Amy Timberlake’s (2003) *The Dirty Cowboy*, students could be encouraged to model their own stories after the different authors’ styles. When these texts are shared, both teacher and students can enjoy the fact that, as one student pointed out, “Some stories can be really funny and make you laugh.” Such a process would require hard work, certainly, but it would also involve Papert’s (2002) idea of hard fun.

The second and third conditions that entice students to engage in literacy-related tasks involve learning and choice. Commenting on learning, a student said, “It’s fun to read if you learn.” Reflecting on the importance of choice, another student explained, “Sometimes you can make up your own things and...they can be about anything you want or things you like.” Too often, however, learning is devoid of choice and merely involves answering the questions someone else, such as teachers or textbook and worksheet authors, has asked. Instead, classroom teachers should give students opportunities to choose and answer their own questions. Not only does the formulating of questions involve higher-order thinking processes, but there also exists the added benefit of students’ motivation to actually seek out meaningful answers to their own questions. After teachers model what it looks like to ask and answer one’s own questions, students could be encouraged to keep an
“I Wonder...” list from which they could later draw inspiration for personal reading and writing projects. Teachers might then provide not only the time necessary for the answering of the questions, but also the resources by providing a wide selection of high-quality expository texts which will lure students into exploring the informational aspects of hard fun.

The results of this study indicate that students’ ideas about fun are complex and multi-dimensional. These findings are similar to those reported by West (1994) who explains that, “fun was not simply a label” students “used for playing and goofing off, but an expression of positive feelings about the kinds of learning situations that facilitated their goals” (p. 7). Most classroom learning situations are created for students by teachers, and the instructional decisions involved in creating these experiences can impact children’s motivation (Blair, Rupley, & Nichols, 2007; Guthrie, Wigfield, & VonSecker, 2000; Miller & Meece, 1997). Many times these decisions do not include serious consideration of the role fun, particularly hard fun, can play in increasing student engagement. However, the results of this study indicate that literacy activities perceived by students as fun may actually increase their motivation for reading and writing. Consequently, teachers should carefully examine their own beliefs (Squires & Bliss, 2004) regarding the relationship between hard fun (Papert, 2002) and learning. Perhaps educators shy away from serious consideration of fun because the term is typically associated with the kinds of activities found on the playground rather than in the classroom. According to the students involved in this research, however, different definitions of fun can be applied in diverse contexts and these definitions can be broad enough to include parameters specifically related to literacy activities. These parameters incorporate both entertainment value and informational value. Students think reading and writing are fun because, as one third-grade participant said, “You can be entertained and informed.”

Moreover, while many studies report a distressing decline, from year to year, in students’ attitudes towards reading and writing (Kear, et al., 2000; McKenna, et al., 1995; Wigfield et al., 1997), the results of this study offer a glimmer of hope as although positive attitudes did decline from third to fifth grade, they actually increased from first to third. This pattern indicates that time spent in school does not necessarily lead to a loss of love for reading and writing. This pattern, however, also begs the questions, what is happening in first, second, and third-grade classrooms that leads students to associate reading and writing, more and more, with the word fun? And what is then happening that makes older students, in this case fifth-graders, refer to literacy activities as boring? An effective way for teachers
to find answers to these questions is to ask the students in their own classrooms. Utilizing an interview or questionnaire-format, teachers could invite students to reflect on the following questions:

- Is reading ever fun? If so, when?
- Is reading ever boring? If so, when?
- Is writing ever fun? If so, when?
- Is writing ever boring? If so, when?

An examination of students’ responses might help teachers create classroom experiences which take advantage of the motivating power of “hard fun” (Papert, 2002, ¶ 3).

Guthrie (1996) contends that students want to be successful learners, stating, “we know that students bring the desire for involvement curiosity, social interaction, challenge, and enhancement of self-efficacy into school activities” (p. 418). He points out, however, “if the context supports these motivational goals, students become intensively engaged. If the context suppresses them, children become disaffected” (p. 418). It is the responsibility of the responsive teacher (Oldfather, 1993), then, to create contexts which will support, rather than suppress, literacy engagement (Applegate & Applegate, 2004). Asking for and then listening and responding to students’ perceptions of fun may be one way to encourage them to embrace the hard fun of literacy learning.

**Limitations, Future Research, and Conclusion**

The opinions of the first, third, and fifth-graders involved in the current research shed light on the relationship between fun and literacy learning. After considering the responses of all sixty participants, clear themes emerged which demonstrated that these students’ definitions of fun were complex and multi-dimensional. Due to the size of the sample, however, interview data was not sorted by grade level, but rather, considered as a whole. Follow-up research could sort responses by grade level in order to examine the subtleties of students’ perceptions related to fun at different developmental levels.

The current research also attempted to better understand the relationship between fun and literacy learning through the honoring of student voices. Consequently, it focused solely on the opinions of the student-participants and did not include the voices of the participating classroom teachers. Likewise, the current
study did not include within its scope an examination the participating teachers’ classroom practices. Because much research exists which underscores the pivotal role teachers can play in shaping the beliefs of their students (Dreher, 2002/2003; Kern, Andre, Schilke, Barton, & McGuire, 2003; Mathers, et al., 2006/2007), a follow-up to the current project might involve an examination of the relationship between students’ perceptions of fun and teachers’ instructional choices. Such an examination would shed light on the results of this study which indicate that as students move through first, second, and third grade, they come to associate reading and writing, more and more, with the idea of fun. Such an exploration might also shed light on what happens that makes older students refer to literacy activities as boring. This information might, ultimately, help teachers make better use of the motivating power of “hard fun” in literacy learning.

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**About the Author:**

Formerly an elementary school teacher, **Brandi Gribble Mathers** now serves as an Associate Professor of Education at Geneva College where she teaches both graduate and undergraduate courses in literacy assessment and intervention. Brandi would like to acknowledge Dr. Evangeline Newton, Kristin Snodgrass, and Eric Stein for graciously lending their expertise to this project.
Concerned about the environment and delighted with the lush illustrations in Lynne Cherry’s (1990) classic picture book The Great Kapok Tree: A Tale of the Amazon Forest, Mrs. Belgarde decides to read it aloud to her third graders. The students love how the tale features the vivid inhabitants of the rain forest and the interdependence of the living things that depend on the tree for sustenance. Excited about the story of how the animals and a Yanamamo child come to a woodcutter in a dream and offer persuasive arguments for him not to fell the tree, several of the children eagerly tell the story to their parents. Deeply involved in recycling and preserving the earth’s limited natural resources, Francesca’s mother is thrilled with Mrs. Belgarde’s book selection since it may inspire the next generation to be more careful stewards of the earth. Dan’s father, on the other hand, is not so pleased with the story he hears from his son. After all, he makes his living as a logger, and doesn’t the book depict loggers and their livelihood in a negative light?

This vignette clearly depicts the dilemma many teachers encounter today as they struggle between ignoring the growing environmental crisis or risk offending parents whose very livelihood depends on practices harmful to the earth. It seems clear, though, that global warming is a complicated, hot button topic that needs to be explored in today’s classrooms.

Most scientists are united on the topic of global warming and the necessity for radical change in how we conduct our daily lives; yet they are not in agreement on exactly how to make those life changes or how long we have to remain indecisive. Just a few years ago, many of the planet’s leaders were certain that it would be up to the next generation to make those hard choices, but global warming has increased more rapidly than expected, forcing pivotal decisions about the Earth’s future to be made now. As always, books raise awareness, offer solutions, and inspire creative thinking. We have collected some of our recent favorites that just might spark the imaginations of young readers to make this a cleaner, greener, more sustainable home that we can share with the species that were here before us.
Please note the grade level recommendations are only starting points for teacher consideration. For example, we both feel strongly that Animal Poems of the Iguazu (Alarcón, 2008) and Wangari’s Trees of Peace (Winter, 2008), although listed for younger readers, would have a powerful impact when shared with upper elementary, middle, and high school students.

**Grades K-3**

*Animal poems of the Iguazu/Animalaria del Iguazu.*
Illustrated by M. C. Gonzalez.

Through gloriously alive paintings and perfectly pitched text, this lovely tribute to nature is a delight for all the senses. Surely one of these 26 poems will capture the imagination of readers and prompt earth’s caretakers to take note of the natural beauty of the world around us. Alarcón describes a vivid world where toucans have papaya slices for beaks and multicolored parrots use their demanding tones to challenge the stillness of the air. Established in 1934, Iguazu National Park touches on parts of Argentina, Brazil, and Paraguay, and Alarcon’s poems make it even more essential that we do something to save the beautiful wild places that remain on this earth. The language is playful yet instills a sense of urgency in readers. As Alarcón uses his keen observer’s eye to raise awareness, he lets the creatures of the rain forest speak for themselves. The pages are as crowded with colors as the rain forest itself, reminding readers of what they miss by never looking closely at the world around them. The mixed media illustrations with eye-popping hues and cut paper give textures to the creatures that wriggle, flap, and swim through the book’s pages. Unspoiled places grow rarer every day, and this lovely collection of poems will remind readers of what we’re losing daily. Having the poems written in both Spanish and English is a bonus.
Ice bears. Illustrated by Ilya Spirin.

Providing young readers a personal year-in-the-life account of the ice bears of the Arctic, this timely book is sure to provide compelling reasons for the policy makers of today and tomorrow to pay attention to the plight of the creatures dependent on Arctic ice for survival. Gently but firmly, the mother ice bear teaches her two ice cubs how to hunt, swim, care for their fur, and to survive, but she can do nothing about the shorter winter seasons that are endangering her species’ livelihoods except wait restlessly for winter and ice. The stunning watercolor illustrations that fill this picture book’s pages pay tribute to these unique inhabitants of the Earth, and readers will probably brush their faces and slap their arms in sympathy at the detailed full-page close-up of an ice bear’s face covered with swarming mosquitoes in search of blood. Especially effective is a two-page spread showing the mother ice bear as she heads away from the sea in search of ice while her two cubs pace restlessly. Back matter includes a warning about the dire straits faced by these bears with a million square miles of Arctic sea ice lost to global warming. The book also includes a list of organizations working to save the environment. Through the bears’ interactions with other Arctic dwellers such as wolves, walruses, and ringed seals, readers are reminded of the interdependence of species.

Wangari’s trees of peace: A true story from Africa.

One woman CAN make a difference, and this picture book biography of environmentalist Wangari Maathai shows young readers exactly how much of a difference one determined person with a vision can make. Born near Mount Kenya, Wangari misses the trees of her homeland while she is in the United States studying. Upon her return, she finds a desolate land where buildings have displaced the trees of her childhood. Determined to turn
things around, she plants nine seedlings and then persuades some of the neighborhood women to join her mission. The founder of the Green Belt Movement, Wangari ends up being jailed for protesting the government’s continuous raping of her country’s natural resources. Lauded for her exceptional work, she received the Nobel Peace Prize in 2004. The acrylic illustrations used by Winter pay tribute to this woman who created an army for peace and reclaimed the landscape of Kenya for the next generation. Winter uses tones and tints that enable readers to see the individual leaves and delight in the rows of trees, 30 million strong, planted by her followers. Young readers are certain to applaud her efforts and may enjoy pairing this inspiring story with Claire Nivola’s *Planting the Trees of Africa* (2008). Many may even decide to plant a tree in their own backyards.


British author Melanie Welch has created a beautiful, straightforward book that will help even preschool children understand ways they can help care for the world. Die-cut pages, bold illustrations, and lift-the-flaps, remind children of ways of both conserving energy and caring for nature. People of all ages can see how simple things such as remembering to turn out the lights when leaving a room, or making sure to turn off the tap while brushing your teeth can save precious resources. Gently reminding readers to feed birds in winter, grow plants from seeds, and recycle garbage helps young readers better understand and appreciate our natural world and conservation.

Grades 4-6


Intrigued by the earth’s ocean currents, oceanographer Curt Ebbesmeyer has been tracking the trash that travels along the sea since 1990. With the assistance of mostly amateur ocean observers across the world, he has tracked sneakers, soap
dispensers, hockey gloves, and LEGO pieces that accidentally spilled into the watery brine during transit from one port to another. Tracking the trash helps scientists understand more about the ocean. Protecting the marine environment is at the heart of this wonderful book about the journey trash takes across our world’s salty surfaces. To read this delightful account of one man’s interest in tracking trash is to ponder the world’s oceans as debris-filled bodies of water. The book’s splendid photographs, maps, and illustrations are sure to remind readers that trash doesn’t just disappear; it may find its way into the ocean’s Eastern Garbage Patch, a section of the Pacific Ocean between Hawaii and California that is about the size of Alaska. The author offers simple suggestions for how we can all make a difference in the amount of trash being generated by reducing, reusing, and recycling.


Environmentalist and children’s book author and illustrator, Lynne Cherry teamed up with award-winning photojournalist Gary Braasch to create an engaging, highly readable book explaining the science behind global warming. The book creates a sense of immediacy and reader involvement as the authors personalize this problem by introducing young readers to 44 scientists and the student “citizen scientists” who help them gather clues to “unravel the mysteries about our changing climate.” Divided into four sections, the book weaves Braasch’s striking photographs to support and extend the text. Section one, “Where We Find Clues about Climate Change,” explains how data was collected from flowers, trees, birds, butterflies, frogs, glaciers, and much more. The other sections, “Fitting the Clues Together,” What Scientists and You Can Do,” and “Resources,” are just as intriguing as the first section. Students learn how they can take action and make a difference in the
environment. For instance, using just one gallon of gas in a car, lawnmower, or blower engine adds 20 pounds of carbon dioxide to the atmosphere. Knowing this, children in Vermont created no idling areas around schools, at the same time, saving drivers money and helping the environment. Kids also helped plant trees since a mature tree can absorb nearly 48 pounds of carbon dioxide a year and release enough oxygen back into the atmosphere to support two people. Children and teachers alike will appreciate the resources in this highly informative book.

Gore, Al. (2007).

An inconvenient truth: The crisis of global warming.

Stunning, compelling, and urgent in its intent, this adaptation of Gore’s original book for adults is sure to make believers of any naysayers about global warming and climate changes. Filled with colorful photographs, charts, and graphs, the book’s fifteen chapters describe in vivid detail the future of the earth if we don’t take action soon. Gore’s explanations of the melting polar ice caps, the threats to endangered species, and the increase in tropical storms are troubling. Three maps showing the amount of glacial melting in Greenland during 1992, 2002, and 2005 are particularly horrifying for the consequences to the globe. The book features photos of the urban sprawl of Tokyo, clearcutting in Forks, Washington, and a garbage dump in Mexico City. The text describes the effects of greenhouse gases and our reliance on fossil fuels and explains that the heavily industrialized, most technologically advanced nations such as the United States, are responsible for much of the problems. If anything, Gore seems somewhat restrained when it comes to our reliance on fossil fuels, which has resulted in much of the damage to our planet. To realize that our nation emits more greenhouse gases than Africa, Asia, Australia, the Middle East, and South America combined is to feel shame and grave responsibility. Tellingly, Gore calculates the number of peer-reviewed articles dealing with change in the climate published during the past 10 years: 929. None of those articles disputes the cause of global warming yet fifty-three per cent of the popular press expressed doubts about the causes of global warming. Gore offers specific suggestions about what we can do about the looming crisis, leaving readers with a sense of immediacy but also a thread of hope.

Lonely after being displaced by his family’s move from Tucson, Arizona to Edenboro, Massachusetts, Ben Moroney misses the desert ecosystem, his best friend Tony, and his pet lizard Lenny. Desperate for the connections he had in his old home, the fifth grader begins walking through the woods near his house and spending time with his science teacher, Mrs. Tibbets, who teaches him about the habitat and critters that live right beneath their feet. Reeling from the death of her husband, Mrs. Tibbets is also looking for a place to fit in since her teaching methods conflict with the principal’s philosophy, and she and her sister-in-law are at odds about her husband’s wishes for the land he left behind. Ben is drawn especially to the plight of spadefoot toads, who have but one night a year to mate in a vernal pool that exists only briefly, before disappearing back into their natural homes. But even with his reawakened connection to the natural world, Ben faces several challenges: a school bully and the threat of development of the spadefoot toads’ homes, intended to be bulldozed and filled in. Readers will be inspired by Ben’s fight for the green spaces he has come to love while creating a new home, and they may be interested in the list of resources for lovers of toads and vernal pools found in the author’s note. Ben also has several secrets about the rattlesnakes he accidentally released.


First inspired by Hurricane Mitch in 1998 and then by Hurricane Katrina in 2005, the author tells the riveting survival tale of Jose who lives in La Rupa, Honduras during the torrential rains and mud slides that engulfed his neighbors’ houses. As he works to free some of his neighbors and feed his siblings after the hurricane, Jose considers the toll that the mud caused in their town, covering every house between his family’s and one other on the edge of town, and makes note that the mud came down the hills where the trees had been clear-cut the year before. The worst Caribbean storm in two hundred years, Hurricane Mitch claimed the lives of 8,000 individuals and wiped out entire villages. Just as Katrina revealed the effects of coastal erosion along the Louisiana waterfront, this story illustrates the human cost of careless use of the earth’s natural resources. As Jose wonders, so will readers: Would the mudslides have happened without the clear-cutting?
Although Jane Goodall originally planned to devote four months to studying the chimpanzees of Lake Tanganyika, Africa, she ended up devoting her life to their study. This is a detailed account of how a young woman without academic credentials or much background in studying animals became the world’s most famous primatologist. What she lacked in credentials, Goodall made up for in passion for the chimpanzees she studied on the Gombe Reserve, observing the chimps eating meat and using tools, something no one else had ever done. This detailed biography reveals as much about the human frailties of Goodall the woman as it does about Goodall the researcher, and it offers readers insight into the politics of science. For instance, Goodall was shocked to find that many of the baby chimpanzees that were being harvested were paid for by researchers. Late in her career, she became a tireless activist for conservation. Readers are bound to be enchanted by the description of her journey to Africa and beyond. Some may also be interested in reading Ellen Levine’s *Up Close: Rachel Carson* (Viking, 2007), the biography of another woman who investigated the effects of pesticides on the environment.

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*Investigating climate change: Scientists’ search for answers in a warming world.*

Minneapolis: Twenty-First Century Books/Lerner. 111 pages. $23.95, ISBN: 0-8225-6792-X.

This book, part of the Discovery! Series, invites readers to consider over two century’s scientific investigations regarding global warming. Johnson deftly leads readers on a trail of evidence showing how atmospheric gases affect Earth’s temperatures. Scientists studied glaciers, the greenhouse effect, carbon dioxide, ancient clues such as the width of tree rings, ices cores, and
climatic models, melting ice and rising seas, altered ecosystems, endangered species, and extreme weather trends to forecast future warming trends. The final chapter documents strategies that can be used to both reduce and cope with global warming—strategies for both nations and individuals to consider.


Chip Martin and his best friend Luther Wilson have always loved exploring the Old Place, an abandoned farm near his Florida home. But when his mother’s budding romance with Luther’s uncle Booker angers Luther, Chip searches for solace in the place he loves best and begins exploring the marshy woods near the farm. To his delight, he spots two fuzzy kittens frolicking in the woods, kittens that turn out to be the offspring of a Florida panther, a critically endangered species. But the panthers’ habitat is threatened by the plans of Mr. Blake, who has rented the property as a site for a meatpacking plant. The owner, Mrs. Franklin, is in a nursing home, and has no idea of his plans. Desperate to save the panthers’ lives and the land he loves so dearly, Chip rallies Luther, soccer fanatic Lily, and several classmates who have been displaced by a hurricane, to prevent Blake’s bulldozer from wreaking havoc on the land. But the protest dwindles as the children’s families find more permanent homes and leave the area. Kate’s boyfriend, Brad, covers the protest for the local newspaper, and Kate finds out that some city officials were about to grant a variance to Blake so that he could do what he wanted to do with the property, regardless of the wishes of his neighbors.

**Grades 9-12**


In the not too distant future, Earth’s enormous ice caps are melting, and the world’s citizens are drowning, disappearing into watery graves as the sea relentlessly swallows up the land. Seeing no other way out, fifteen year old Mara, a resident of Wing, an island somewhere in the north, persuades some of her neighbors to
abandon the doomed island in search of safety. Through a primitive Internet connection, she has learned of cities built in the sky that are safe from the constant storms and ever-rising waters, and three boats head off to find sanctuary in New Mungo, the closest of the New World cities. After a challenging journey, Mara discovers that the new cities aren’t the sanctuary she once thought. In fact, the doors to the city are closed, and its perimeter is surrounded by hundreds of desperate refugees looking for shelter. Clearly, the lessons learned by earth’s citizens have created groups of haves and have-nots. Safe drinking water is at a premium, and Mara must find a creative way to save herself and those who came with her. The author graphically depicts the possible consequences of human greed and excess and forces readers to wonder if we are at the brink of destruction right now, in 2008. Her description of a hot, fevered world followed by hurricanes and constant rain is as vivid and mind-numbing as the rains she describes. What would the consequences be?


The fate of the world rests on the muscular shoulders of seventeen-year-old Jack Danielson. In *Firestorm* (2007), book one of *The Caretaker* trilogy, Jack saves the Earth’s oceans while losing everything and nearly everyone he loves. In *Whirlwind*, the second book, Jack heads to the Amazon to rescue his girlfriend P.J., who is in the clutches of a colonel, the dark lord of the future. Fast paced and filled with descriptive, gripping passages that will have readers racing to its conclusion, the book vividly illustrates humankind’s careless ravaging of the rain forests, and the void caused by the loss of the creatures that live within the forests. Readers will be as disturbed as Jack is reminded of how quickly nature can be destroyed, and they’ll surely root for this eco-hero to save the world in this thriller with a conscience.
It is surely no surprise to today’s drivers that the world’s dependence on oil has affected political, economic, and diplomatic decisions. This concise guide to oil explains how oil became such a popular fuel and traces the rise and fall and rise of the price of gasoline at fuel pumps. Readers and their parents will feel somewhat nostalgic as they take note of the then-shocking price of a gallon of gas back in 2006: $2.53 in the United States, $5.63 in France, $5.86 in Germany. In addition to explaining why the price of gasoline has risen, Laxer also discusses the ecological damages being done to the environment by the overuse of fuel and that continues to damage the atmosphere. Laxer makes no bones in identifying oil as a limited resource, and how its use has contributed to catastrophic climate change. Most scientists agree that burning fossil fuels has increased the carbon dioxide in our atmosphere, trapping the heat from the sun, expected to cause a five degree temperature change by 2100. Citizens of the world can expect this increase to result in extinct species, larger deserts, sources of fresh water imperiled, sea levels rising, and flooding. In simple terms, Laxer explains how peak oil and climate change are connected. Readers can, however, take heart from Sweden’s example as two years ago, that country decided to phase out its use of petroleum over the next 15 years. Sweden’s nine million citizens are on track with alternative energy sources to become what Laxer calls both “post-petroleum” and “post-nuclear.”


The future is here in this highly original book set in West Africa in what was once called Niger. The Earth in 2070 is a very different place from the planet we know now. While Dieuri, a Haitian man bent on saving the world from itself, combines magic and science to create Peace Bombs to counteract nuclear fallout, his Grand Bois group of eco-terrorists wreaks havoc on oil refineries, clear-cut logging machinery, and animal slaughterhouses. The launch of nuclear bombs and Peace Bombs causes a green wave to sweep over the Earth, flooding the world with magic and inadvertently letting loose earthquakes, tsunamis, and tornadoes. No longer is it safe to travel anywhere alone, and although all the worlds have united, the
threat of a looming war propels fourteen-year-old Ejii, a shadow speaker, to cross the Sahara desert alone, embarking on a journey to save her people. Readers will be intrigued by Ejii’s unique abilities to hear the voices of those in the shadows and to see great distances, and they are sure to admire her determination to do her part to save the world.

References


About the Authors:

Faculty members at Washington State University, both Terrell A. Young and Barbara A. Ward have a great passion for the natural beauties of the Earth. Young is a member of the NCTE Orbis Pictus Award for Outstanding Nonfiction Books for Children while Ward serves as chair of the IRA Notable Books for a Global Society.
History and Mission of Reading Horizons

Reading Horizons began in 1960 as a local newsletter and has developed into an international journal serving major colleges, universities, and individual subscribers across the United States and Canada as well as a host of other countries. The journal serves as a forum for ideas from many schools of thought dedicated to building upon the knowledge base of literacy through research, theoretical essays, opinion pieces, policy studies, and syntheses of best practices. Reading Horizons seeks to bring together school professionals, literacy researchers, teacher educators, parents, and community leaders as they work collaboratively to widen the horizons of literacy and the language arts.

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Manuscripts should be submitted electronically to the editor, Allison L. Baer, at allison.baer@wmich.edu. Please send one copy with full author(s) information, one clean copy with no identifying information, and an abstract. All image files and charts used must be submitted as separate hi-resolution (300dpi) files. Acceptable formats are jpg, tif, or Microsoft Excel format if a chart. Embedded images or charts in articles accepted for publication will be deleted from the final publication unless submitted in this manner. Manuscripts should be approximately 25 pages in length, not counting references and figures, double-spaced, and using 1.25 margins and 12 point font. Manuscripts will be acknowledged within two weeks of receipt. Manuscripts must follow the Publication Manual of the American Psychological Association (APA), 5th Edition. Those not written in this style will be returned without review.

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After in-house review by the editor, and if accepted for review, manuscripts will be sent to three members of our Editorial Advisory Board for blind review. Author(s) will be informed of our decision within two to three months of submission. Criteria used for evaluating and reviewing manuscripts are significance of the contribution to literacy/language arts research and instruction, clarity of writing, and sound methodology process used.
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<td>Total _________</td>
<td></td>
</tr>
</tbody>
</table>

Name: ______________________________________________________________

Address: ____________________________________________________________________

City/State/Province: _______________________________________________________

Country/Postal Code: _______________________________________________________