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Reading
Horizons

Dorothy J. McGinnis Reading Center and Clinic
College of Education
Western Michigan University



READING HORIZONS:
A Journal of Literacy and Language Arts

Editor: Karen F. Thomas
Executive Assistant: Susan Standish

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

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Encounters with information text: Perceptions and insights from four gifted readers

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ABSTRACT

This study examines the nature of engagement with informational text by exploring four gifted students' responses to children's information books and informational storybooks. The researchers interviewed the students and students recorded their responses to books in journals over the course of the study. Results indicated that these children expressed a variety of reasons for reading non-fiction and held interesting perceptions and strong opinions about informational content, which varied according to text type. Children identified authors' purposes and genre differences, and expressed preference for books with depth of coverage along with a creative format.

What do gifted students do when reading informational text that enables them to learn so efficiently and effectively? As children's information find their way into more and more elementary grade classrooms, we need to identify how students make meaningful connections to informational text and help them find new and more effective strategies for learning from text. Further understanding of gifted children's responses to informational text may provide perspectives on how to help learners engage and construct meaning in the content areas.

While numerous literacy experts have acknowledged the need for children to experience a wide range of literature in the classroom, the term "literature" is most often considered synonymous with story. In

fact, nearly two-thirds of fourth-graders interviewed during the most recent National Assessment of Educational Progress reported not reading information books at school (Campbell, Kapinus, and Beatty, 1995). A recent nationwide survey of teacher read-aloud practices in 537 elementary classrooms nationwide indicated that none of the most-frequently read titles at any grade level were information books (Hoffman, Roser, and Battle, 1993). Moreover, in a recent study, children were asked to discuss the most interesting book or story they had read. Many children could not think of any information books they had found interesting (Gambrell, Codling, and Kennedy, 1994).

Despite the dearth of information books in today's classrooms, research on children's reading preferences suggests that many children today, especially those in the middle grades and older, prefer reading non-fiction to fiction (Monson and Sebesta, 1991). Moreover, research on gifted children's reading preferences (Swanton, 1984) suggests that many gifted children prefer information books to story.

With children's increasing interest in the nonfiction genre, we need to know more about how children respond to nonfiction books. As Margaret Meek (1995, p. 237) notes:

Critics of children's literature are apt to exclude nonfiction texts from their accounts of what children read. Yet for many young readers, these picture and caption books are their preferred texts. We know too little about how children actually read books with titles like Roman Britain, Stars and Planets, or Light. We need to know much more about how texts teach children about learning. We need critics who are prepared to judge the nature and quality of the engagement required by the nonfiction offered.

In an effort to explore the nature of engagement with informational text and to learn how capable readers engage and construct meaning from expository text, the authors examined four highly gifted children's responses to information books and informational storybooks. We felt that understanding the responses of exceptionally capable and efficient readers would reveal important connections that need to be made to engage and learn informational content. We also expected to find useful insights into how students who are gifted think about text types by examining student perceptions of genre differences between informational books and informational storybooks on the same topics. In contrast to

straight expository information books, informational storybooks are books which combine features of narrative and exposition (Leal, 1992).

REVIEW OF THE LITERATURE

Recent research in reader response is based upon the view that reading is not a passive act, but a process of continuous interactions between the reader, the text and the context. Readers seek to construct meaning from the text and their responses are dynamic, fluid, and varied. Readers continuously respond to text content through on-going engagement with books.

Different readers construct different meanings from texts (Purves, 1985). In addition, different genres also can influence meaning and understanding of information (Leal, 1992; 1994). In this study of gifted readers' perceptions of two informational genre differences, information books refer to books containing expository text. Such texts depend upon the reader to fully believe the accuracy of the material presented and derive meaning from the text itself (Rosenblatt, 1985). Informational storybooks, conversely, combine narrative and expository text, and require both "willing suspension of disbelief" (Coleridge, 1907) and acceptance of the accuracy of the information presented (Leal, 1990; Pappas, Kiefer, and Levstik, 1990).

With a few exceptions, the vast majority of studies of response to literature have focused upon children's developmental differences in response to narrative books. Such studies have examined children's development of sense of story (Applebee, 1978), the role of cognitive development in responses to literature (Galda, 1982) and children's interpretation of story themes (Lehr, 1988). Hickman's (1979) research, while also addressing developmental differences in response, broke new ground by exploring naturally occurring instances of response to literature in the environment of the classroom.

While researchers have examined a range of aspects of children's narrative responses, studies of response to nonfiction books have been far fewer. Pappas' (1993) seminal study, which compared 20 kindergartners' ability to retell a narrative children's book with a nonfiction one, has opened the floodgates to an ever-increasing interest in children's response to nonfiction. Pappas' (1993) findings that young children were as capable of retelling informational text as narrative called into

question the usual assumption that narrative is primary, this suggests that young children, and by inference older children, may possess far more control over expository text than has previously been thought.

Studies of the process of response have been guided by the work of Rosenblatt (1978) who suggests that readers assume two roles, or stances, toward reading, and that our emphasis shifts from one to the other depending upon the material read and our purposes for reading. In the efferent stance the reader is concerned with taking information from the text, in the aesthetic stance our concern is for the experience of reading, the feelings and images that come and go as we read. Clearly, stance is not static, it changes as the reader interacts with the text. As Rosenblatt (1991) notes, we can, in effect, read using both stances; we may read for information at the same time we feel emotions about what we are reading. Evidence now exists that children may respond efferently to nonliterary text and may take either stance in response to informational storybooks (Farnan and Kelly, 1993; Maria and Junge, 1994).

The few studies of nonfiction response provide significant information about children's understanding of such text. Moss (1997) examined first graders oral retellings of a nonfiction book; her results confirm Pappas' findings that young children can comprehend well-written text. Leone (1994) compared second and fifth graders ability to create written retellings of informational, informational storybook, and narrative books. She found that while second graders found retelling informational text more difficult than informational storybook or narrative text, fifth graders' retellings of nonfiction texts yielded higher scores than did their retellings of fiction or hybrid text.

Other studies have focused upon children's verbal and written responses to nonfiction, both focused and open-ended. Leal (1994), examining third grade students' learning of scientific information from two genres of text, found that informational storybooks may facilitate children's learning of scientific information. Moss and Leal (1994) examined second, fourth, and sixth graders' written responses to selected questions about nonfiction books and informational storybooks. Fareast, Miller and Fewin (1995) analyzed fourth graders' open-ended journal response to Blumberg's *The Incredible Journey of Lewis and Clark*. These studies demonstrated that through such responses to informational content, children not only learn about text content, but enhance their understanding of information given while gaining insight into the author's

craft. It is for this reason that the following study examined gifted readers' verbal and written responses, both focused and open-ended, to information and informational storybooks.

METHODOLOGY

The participants.

The four gifted students selected for this study, representing a range of giftedness, were aged eight, ten, and two twelve-year-olds. Two were from the Northeast and two were from the southern United States. They were selected based upon: 1) their identification as highly or profoundly gifted; 2) their interest in informational and informational storybooks, and 3) their interest in and willingness to participate in the study. The eight-and ten-year-old, a sister and brother, were considered profoundly gifted with IQ's scored above 200 and were acquainted with one of the authors prior to the study. The two twelve-year-olds, a girl and a boy, scored IQ's of approximately 160. They were identified by their gifted teacher as highly gifted and especially interested in reading nonfiction. Based on IQ scores and teacher evaluations, these students were invited to participate in the study. Additional information about each student can be found in Appendix A.

Data collection.

Over a period of six months, each of these gifted readers was asked to respond to selected information books in a journal. In addition, each participant was interviewed and audio-taped by the researchers once each week. These interviews were designed to provide the researchers with more elaborated information on each students' written responses to information books and informational storybooks.

At the beginning of the study, each student was interviewed to obtain a nonfiction autobiography adapted from Carlsen's (1988) *Voices of readers: How we come to love books* (see Appendix B). These interviews provided the researchers with insights into each student's reading habits and perceptions of the nonfiction genre.

Following the nonfiction autobiography, students were asked to read sets of books relating to two particular science topics: the human body and space. Each set of books included an examination of one information book and one informational storybook on the same topic.

These books were selected for: 1) their relevance to the science topics selected; 2) their scientific accuracy; 3) their attractive design; 4) their easy-to-read format; and 5) their well-known authors who are respected for their level of knowledge and accuracy in presenting informational content. Books that would be easy for these students to comprehend were selected deliberately in an effort to allow these students to focus their attention on the format, structure, and literary aspects of each text, rather than merely on content. The two information books selected were: 1) *What Happens to a Hamburger* (Showers and Rockwell, 1970); and 2) *The Planets in Our Solar System* (Branley, 1987). The two informational storybooks were: 1) *The Magic School Bus Inside the Human Body* (Cole, 1989) and 2) *Journey into a Black Hole* (Branley, 1986).

In their journals students were invited to write anything they wanted as well as to respond to the following four questions for each book:

1. What do you think was the most important information in this book? This was aimed at identifying student perception of **important content**.
2. What did you learn from this book that surprised you? OR: What did you learn that you didn't know before? This was aimed at identifying **new content**.
3. What else would you like to know that the book didn't tell you? This was used to identify **missing content**.
4. What would you tell a good friend about this book? This was used to identify **affective response** and its impact.

These questions were designed to provide the researchers with information about students' engagement and understanding of science related texts as well as to discern their prior knowledge about the topic of each. In addition, question four provided the researchers with information about students' personal responses to each text.

After reading these books and recording their answers to the above, students responded to another four questions for each book:

1. Would you classify this book as fiction or non-fiction? Why?
2. What do you think was the primary purpose of the author in writing this book?
3. In what ways does the information book differ from informational storybook(s)?

4. Within each set of books on the same topic, which one did you prefer? Why?

In addition, each student evaluated the books read by responding to questions adapted from Carter and Abrahamson's (1990) guidelines (see Appendix C). All questions for these interviews were selected to elicit each student's habits, preferences, and understanding of information books and information storybooks.

Student journal entries and interview data were read and student responses were categorized and sorted into like groups. Journal entries were cross-checked with interview data in order to ensure that emergent categories reflected student perspectives and intentions. Transcripts and journal entries revealed clear themes that emerged from the data. These categories, for example, included themes such as "desire to learn" as a reason for reading nonfiction. For example, in one of her journal entries, Becky noted that she read nonfiction because "It teaches me about the things I want to know." This statement was coded as "desire to learn." It was cross checked with interview data that reflected the same theme. For example, in one interview, Becky reported "Nonfiction lets me learn more about history, inventions, and science fact." These themes are elaborated upon in the following section.

DISCOVERIES

We uncovered many useful insights into student engagement with informational texts. The following discussion will focus on four areas that emerged as we examined students' responses to these information books: 1) students' reasons for reading nonfiction; 2) students' perceptions of textual content; 3) students insights about text types; and 4) students as literary critics.

Student reasons for reading nonfiction.

Students' responses as to why they read nonfiction generally fell in three categories: a desire to learn, to provide pleasure, and to stimulate their imagination through unusual information and/or humor.

Desire to learn.

These four students offered a range of reasons for reading nonfiction, most of which pertained to their love of learning and desire to acquire information about specific interests. Adam, age 12, had an answer that was typical of the group: "I like learning things...I read anything I can find that interests me...the workings of the earth, nature, war, Einstein, math..." Michael, age 10, enjoys reading about primates, science, and art, while Maeghan, age 8, enjoys reading about animals, bugs, veterinarians, and cats. Becky, age 10, pursues her interests in science through reading about scientists, astronauts, and inventions. All of the children noted that nonfiction books influenced them by adding to their storehouse of knowledge; Maeghan, for example, indicated that nonfiction books helped her "fit things with things I have already learned."

Desire to provide pleasure.

All of the children read nonfiction for pleasure. Michael, who is a voracious reader, noted that he especially enjoyed *The History of Art* by H.W. Jason. Interestingly, his teacher heightened his interest in the book by providing him with information about the artists. Michael noted that, "She told us the nitty gritty on all the painters and most architects." Adam did not identify a specific book, but noted that he enjoyed reading about Einstein. "Looking at the basis of quantum mathematics through Einstein's eyes is really weird."

Desire to stimulate imagination with unusual information and/or humor.

Interestingly, these students particularly appreciated books with narrative qualities and humor. Michael identified good nonfiction as "interesting and having narrative qualities. Also, if it tells you funny stories and has anecdotes." Becky noted that she liked books that "have a story to keep you interested." Adam put it differently, stating "I like books that let you have fun while learning." All of the children expressed a preference for books with fascinating, unusual facts or bizarre, unexpected information. Becky, for example, expressed surprise at learning from *Journey into a Black Hole* that "a thimbleful of gases compacted weighs billions of tons." Becky expressed a preference for books that "pull you in...and speak to the reader." She found the Magic School Bus books to be particularly strong in this area.

STUDENT PERCEPTIONS OF TEXTUAL CONTENT

As noted, these four gifted students were asked to reflect upon important content, new content, missing content, and affective content in these information books and informational storybooks. The following discussion explores how these gifted readers engaged these two different types of text. In an attempt to consolidate the findings, *Table 1, Text Type Differences in Student Perceptions of Content*, provides an overview of student perceptions.

Information books.

In regard to students' thinking about information books, these four students generally reported discrete facts, found in-depth coverage of concepts missing, and viewed the presentation of information as "boring."

Information storybooks.

Responses to informational storybooks were quite different from response to information books. Generally speaking, across all four questions, students gave greater and more thoughtful responses with this type of text and seemed to engage the information more thoroughly, focusing more on concepts and ideas generated by the text rather than discrete facts.

STUDENT INSIGHTS ABOUT TEXT TYPES

The second phase of the study yielded important information about the ways in which students perceived the different types of text. Students were asked to classify each book as fiction or nonfiction, identify the author's purpose in writing the book, cite differences between information and informational storybook genres, and identify likes and dislikes among the text. To more clearly illustrate perceived differences, *Table 2, Text Type Differences in Student Perceptions of Genre*, differentiates genre characteristics identified by students.

Table 1

Text Type Differences in Student Perceptions of Content

<u>Information Books</u>	<u>Information Storybooks</u>
<p><u>Important Content</u> Students focused on specific, discrete factual information along with comments about the illustrations.</p>	<p>Students focused on major concepts such as the white blood cells role in fighting disease, with fewer comments on discrete pieces of information.</p>
<p><u>New Content</u> Very few things stood out as new in the information books and when they did they were specific facts such as the distance of the planets from the sun.</p>	<p>Many new, unusual and interesting facts and concepts were reported such as how the human body defends itself. Students also found the story structure for <i>The Magic School Bus Inside the Human Body</i> new and intriguing.</p>
<p><u>Missing Content</u> Missing information focused on specific concepts rather than discrete information, with students desiring a greater depth of information. They pointed out that these books didn't answer their "why" questions or explain outcomes such as what happens to the fat content of a hamburger.</p>	<p>Missing information involved mysteries such as where objects come out after they go in a black hole, concepts such as origins of bacteria and the relationship of the planets to black holes, and motivations, including skepticism about the possibility of black holes</p>
<p><u>Affective Content</u> Responses were generally negative, Viewing the texts as simplistic, boring And therefore lacking in interesting Information.</p>	<p>Responses were strongly positive, connecting the use of imagination to engagement with text, and noting that this type of text makes learning fun</p>

Table 2

Text Type Differences in Student Perceptions of Genre

<u>Information Books</u>	<u>Information Storybooks</u>
<p><u>Text Type Classification</u></p> <p>All students clearly identified the books as nonfiction with straight facts. Adam reported the information "all jumbled up" and Michael called and Adam</p> <p>it as a "random recollection of facts in a simplistic view."</p>	<p>Students saw the joining of fiction and nonfiction. Michael called it "N-fiction" because it is "between fiction and nonfiction"</p> <p>described it as a combination of fantasy and fact. All students viewed it as more sophisticated.</p>
<p><u>Author's Purpose</u></p> <p>Students understood the goal of Information book writers as purely Efferent, to provide the reader a Simple book of facts.</p>	<p>Students readily identified the dual purposes, both efferent and aesthetic, and the goals to inform/ Educate and to do it in an Entertaining way. Adam described It as trying "a new approach... not Just to give information but to Make it funny and fun."</p>
<p><u>Genre Characteristics</u></p> <ul style="list-style-type: none"> *Had straight, bare facts *Didn't go anywhere or try to bring you into it by making connections *It didn't give you anything really Interesting to think about. *Jumped around from topic to topic *Titles also were straight fact. 	<ul style="list-style-type: none"> *Students noted the blurring of the lines between fiction and nonfiction noting the combined elements of story and fact. *All students were able to cite specific parts within each of the Books where one genre took
<p><u>Likes and Dislikes</u></p> <ul style="list-style-type: none"> *Bland, not too interesting *Too strait laced *Good art work, a good artist *Fascinating details 	<ul style="list-style-type: none"> *Fun format *Depth of coverage *Adam compared it to reading a "gigantic comic strip" *Neat pictures and diagrams *Creative and original

Text type classification.

Classifying these books was no challenge for these students. The non-fiction was clearly non-fiction because, according to Adam, its information was presented as "straight facts softened for younger kids" while the informational storybook was a combination of fantasy and fact, noting that "it definitely tells more of a story."

Author's purpose.

All students had definite ideas about the author's purpose in writing these texts. The students understood the goal of the information book authors as purely efferent, e.g., to provide different types of information on the topic. In contrast, when identifying the author's purpose in the informational storybooks, students identified their dual nature, efferent and aesthetic, to both provide information and, as Mike said, to do it "in an entertaining genre." Meaghan noted that, "It makes you learn facts without making it boring."

Genre differences.

These students' conclusions about the differences between text types held some keen insights about the nature of literary genre. They readily noted the blurring of the lines between fiction and nonfiction; Michael even coined a new term for this gray genre with "n-fiction." Becky and Adam noted that this genre combined elements of story with fact, and all of the students were able to cite specific parts within each of the books where one genre took precedence over the other.

Preferences of books and text types.

The children unanimously preferred the informational storybooks to the information books, praising the informational storybook format. Michael preferred this genre because "the information was given to the reader in more complicated terms." Interestingly, all of the children viewed this book as more appropriate to their ages and expressed real enjoyment in reading the book. Maeghan summarized their strong endorsement of the informational storybook with, "This type of book makes you want to drop everything you are doing and get right down to reading it."

STUDENTS AS LITERARY CRITICS

Given the task of evaluating both information books and informational storybooks, these gifted students easily became literary critics. In fact, their evaluations were carried on throughout the project and reached a summary level in the final evaluation questions. Students' critical evaluations addressed the following areas: 1) creativity encompassing originality and humor; 2) illustrations; 3) writing format and organization.

Creativity/originality/humor.

These children exhibited sincere appreciation for the creativity and originality that occurred in the content and/or presentation in the informational storybooks. Michael zeroed in on the remarkable ability of Ms. Frizzle, telling us that "I think the author of the Magic School Bus series would make a wonderful teacher because she makes learning fun in a creative way. A teacher who can make students learn without the child knowing it is a magician." Adam noted that he enjoyed the originality of *The Magic School Bus Inside the Human Body* because of its humor. "I liked looking at classrooms. The kids are just like the kids at school. It is really funny. They talk about stuff they shouldn't be talking about." Becky noted that she would like to have been in Ms. Frizzle's class.

In contrast, students were critical of the authors of the informational books, quickly pointing out what they considered their lack of creativity. Becky noted that *What Happens to a Hamburger* "was ordinary. If you read a book about that it should be stylish." Adam noted that the author of *The Planets in Our Solar System* appeared to be "trying to be like Joanna Cole but was unsuccessful."

Illustrations.

Illustrations were frequently mentioned as an important factor in evaluating these information books and information storybooks. Adam noted that younger children often look at illustrations before reading the text. He was not impressed with the illustrations in *What Happens to a Hamburger*; he noted that they were "repetitive" and not "exciting" like those in the *Magic School Bus* books. He stated that if he were the publisher, he'd get Bruce Degan to draw pictures and that might enliven the

hamburger book. Becky noted that in general she preferred photos to drawings "because they are much more accurate."

Becky described the illustrations of the children in *The Magic School Bus Inside the Human Body* as ones "kids can relate to," noting that "it was better for the imagination and fun to read." She also noted the comprehensiveness of the illustrations, stating that "the diagrams showed every part of the body, not like *What Happens to a Hamburger*." Michael made similar comments: "My favorite illustrations are with the school bus taking the children on their journey. I like seeing the happy face of the teacher loving her job of teaching and the children enjoying all of her knowledge." Similarly, Adam noted that part of the reason he enjoyed *Journey into a Black Hole* was that it had a "good artist."

Writing, format and organization.

Again these students had definite ideas about what is good writing and organization by authors, preferring the writing style of the *Magic School Bus* books. All four children read nonfiction like writers, noting stylistic devices that keep them engaged. For Adam, clarity and coherence were important. He felt that good nonfiction results when "the writer has all the information he could ever find and it is written well ... well enough so a kindergartner could understand it." He disliked when authors overwhelmed the reader with information or "things you need to help the person learn gradually." He disapproved of books that "jumped around." Michael felt that a good writer uses lots of anecdotes and examples and puts them in a logical order: "I don't like books that are a random recollection of facts." As Maeghan pointed out, "I think the most well written book was the *Magic School Bus* because it makes you learn facts without making it boring. It is also written without having to look up words in the dictionary."

Both Adam and Michael commented on the organization of facts in the information books, reporting the text organization to be unclear and even confusing. Adam complained about the text organization as "jumbled up facts" in *Planets*, while Michael noted that both nonfiction texts "contained random recollections of facts."

These children were surprisingly sensitive to text formats. In their criticism of various books, they sometimes offered suggestions for alternative ways of presenting information. Becky noted that she disliked the format in *What Happened to a Hamburger*. She suggested format and

visual changes that could improve the book; she recommended that the book show a family taking a trip to a doctor's office, recommending that one of the children be examined by the doctor. She suggested the book show the inside of the organs with photographs.

Becky also offered suggestions for improving the format of *Planets*. She noted that she would give "more detailed pictures," constellation maps, and "a test you could do yourself." She also said she'd give "before and after thoughts about the moon. We used to think... but now we know that...." She noted that the format in *Journey into a Black Hole* was "pretty good" with a little kid asking questions and a scientist who keeps interrupting him.

SUMMARY

The results of this study offered insights into the nature of engagement with informational text and gifted readers' perceptions of and motivations for reading nonfiction. It provided a view into the minds of four gifted readers as they interacted with different informational genres.

In summary, the findings revealed that gifted readers read nonfiction because of a desire to learn, to find pleasure and to stimulate their imagination through unusual information and/or humor. The findings also revealed that student perceptions of textual content varied according to the text type. They found the text types intriguing and one student even coined a new term for the informational genre, calling it "n-fiction" which is "between fiction and nonfiction." Moreover, the results indicated that while these students may have been interested in the science topics addressed in each of the books, their level of engagement with the informational texts was deeper and provided more conceptually-related responses than did their level of engagement with informational texts. This is consistent with research studies by Leal (1992, 1994) indicating students' higher engagement and greater learning with informational storybooks.

These students read these informational books like writers. They exhibited great sensitivity to the ways in which authors chose to organize information in their books, and expressed clear preferences for texts that went beyond the conventional to provide "mind-boggling details" that served to stimulate their imagination. They expressed dislike for book formats containing facts that were organized in less-than-clear ways.

They also observed text illustrations carefully, scrutinizing them for accuracy and appeal.

They readily identified the authors' purposes and genre differences between the two types of texts. They clearly understood the authors' efferent purposes with the informational books and combined efferent and aesthetic purposes with the informational storybooks. They responded both efferently and aesthetically to these books, indicating that they preferred to have fun and use their imaginations while learning factual content. At the same time, they expressed appreciation for the depth of coverage of the content along with a creative format.

These findings suggest that these gifted readers' engagement with information text was heightened when both affective and efferent responses were evoked. It appeared that the informational storybook genre may be superior to the information book genre in this area, at least in terms of the books selected for this study. These findings, too, suggest that the evocation of both forms of response results in more pleasurable, and thus more engaging, reading experiences for youngsters.

Obviously, the present study barely scratches the surface of our understanding of the nature of engagement with informational text and children's perceptions of and understanding of different types of information texts. There is clearly a need for additional research studies that explore response to non-narrative text. Many information book authors employ narrative strategies that are not as obvious as those found in Cole's *Magic School Bus* books. Further studies might reveal additional information about how other informational texts that incorporate such narrative features engage students with the content. Moreover, additional studies with non-gifted and/or younger children might provide further insights into children's understanding of information book text structures and the vehicle for engagement.

IMPLICATIONS

The message of this present study is clear. Engagement with informational text is not only possible, but probable when the text is able to include the following: 1) Unusual information and/or humor; 2) a depth of content coverage within a creative format; 3) intriguing information focused on capturing students' conceptual interest; 4) both efferent and

aesthetic purposes; 5) mind-boggling details that stimulate the imagination; 6) accurate and appealing illustrations.

In addition, it is significant to note that when students read books like writers, or literary critics, they are able to engage the text at varying levels, noting characteristics of text structure, content coverage, and interest appeal. A strong implication of this study is that students could benefit from learning to be critics of information books. The understanding of text structure is central not only to comprehension, but also to engagement. Student understanding of information book text structure could also be further enhanced by teaching children to be information book authors and critics. Indeed, providing students more opportunities to experience informational text as author and critic has the potential to develop more critical thinkers and writers while engaging students with important content area learning.

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Appendix A Student Participants' Biographical Notes

Michael was a profoundly gifted 10-year-old who was an undergraduate university student at the time of the study. He soon graduated with a B.A. in anthropology from the University of South Alabama as the world's youngest university graduate. He has since obtained his M.A. in chemistry. Michael began reading at age three. He generally prefers fiction reading to nonfiction because "it lets me imagine." Michael noted that for many years his reading had consisted largely of fiction, but that in recent years he has developed a greater interest in nonfiction. He noted that as a university student most of his reading is factual, and therefore his "escape" reading is usually fictional — "except when I am reading about primates." Michael typically selects books about science of "everyday life." His favorite nonfiction book was *The History of Art*, which was a textbook for one of his university classes. He noted that he does not like nonfiction books that are "a random recollection of facts."

Becky was a 12-year-old middle school student at the time of the study. She noted that she liked both fiction and nonfiction equally because "there are certain appealing aspects in each type." She enjoyed nonfiction because it "gives you a bit of reality." Her interest in nonfiction stemmed largely from her deep interest in "the thought of going into space. The people who write them know what they are writing about. The newer books give you a thrill. You just

can't put them down." She noted that she had read nonfiction since the second or third grade. She enjoyed exploring new topics through nonfiction. She especially enjoyed books relating to "history, inventors, and science fact." She viewed Sally Ride's *To Space and Back* as her favorite nonfiction book because "it gave insight into her life and how she felt. Not just a whole bunch of facts." She reads one or two nonfiction books each month. She felt that a good nonfiction book includes "facts and a story that keeps you interested" and bad nonfiction was comprised of "a ton of facts that are not really in order."

Adam was a 12-year-old middle school student at the time of the study. He enjoys both fiction and nonfiction, but enjoys the latter because he "likes learning things... the workings of the earth and nature... Einstein and math." His interest in nonfiction began when he was around 3, at which time he began perusing encyclopedia volumes about knighthood and heraldry. He noted that most of his nonfiction reading is for pleasure rather than for school; he reads about 30-50 nonfiction books each month. He felt that a good nonfiction book is "written well enough that a kindergartner could understand it."

Maeghan was eight years old and in the fifth grade at the time of the study. She noted that she prefers nonfiction to fiction because it allows you to "learn about things." She noted that her interest in the genre has increased over time, and that she especially enjoys reading about animals, bugs, veterinarians and cats." Her favorite nonfiction title was *Koko's Kitten*. She noted that the nonfiction books she reads "help me fit things in with things I have already learned." She noted that the best nonfiction titles have interesting covers and titles, as well as appealing pictures. She stated that she had never seen a bad book, except ones on "snakes or alligators. They're gross!"

Appendix B

Nonfiction Autobiography

1. Do you prefer fiction or non-fiction? Why?
2. How has your interest in nonfiction changed since you first started reading?
3. How do you select nonfiction books? Are there any particular kinds you especially enjoy?
4. Describe the best nonfiction book you have ever read. Why was it a favorite?
5. What nonfiction books have you read the past year? Why did you read these? Which one was the best? Why?
6. How do nonfiction books you have read influence or affect you?
7. How often do you read nonfiction books?

8. What nonfiction books do you own?
9. What makes a good nonfiction book?
10. What makes a bad nonfiction book?
11. How would you define a non-fiction book?
12. How does an author write an interesting non-fiction book?

Appendix C

Evaluation of Nonfiction Book Reading

Students' directions: For each of the following questions, select one or more of the books you have read and write out your answers:

1. Tell how this book would be different if it had been written in 1950.
2. Describe your favorite illustrations. Which illustration do you wish you had done yourself? Why?
3. Would this book make a good documentary? Why?
4. Explain what you think the author did to research and write this book.
5. How would this book be different if it had been written for an adult? For a kindergarten student?
6. What kind of teacher do you think the author would make?
7. If you had a chance to interview the authors of this book, what would you ask them?
8. Describe three facts, theories, or incidents that you found particularly interesting. Tell why.
9. Examine the title and jacket of this book. Do they present a fair representation of the contents of the book?
10. Select the book you think was the most well written. Pretend a book company is considering publishing this book and you must defend this book. Describe what you would say to persuade them of its value in learning.



Reader response: Students develop text understanding

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ABSTRACT

Prompted by Rosenblatt's (1978) framework of the reader's transactional relationship to the text, this qualitative study examines four fifth-grade students' stances and their responses to a narrative text in three classroom activities, a peer-led discussion group, a story map activity, and written responses. This study primarily investigates issues regarding the accessibility of shifts in stance for the students. Additionally, it calls into question Rosenblatt's construct of the aesthetic-efferent continuum.

This study was developed with the underlying goal of investigating children's emergent understandings of narrative texts across a set of literacy activities. It was prompted by Rosenblatt's (1938, 1978, 1980, 1985a, 1985b, 1991, 1993) framework of the reader's transactional relationship to the text. According to this theory, the meaning does not reside solely within the text or solely within the reader; the meaning for a text comes from the transaction between the reader and the text within a particular context. The reader maintains an active role in deriving meaning and adopts different stances, either primarily aesthetic or efferent, depending on the kind of meaning he/she intends to derive. In the aesthetic stance, the reader fuses the "cognitive and affective elements of consciousness — sensations, images, feelings, ideas — into a personally lived-through poem or story" (1980, p. 388). The reader, thus, engages in a synergistic process of experiencing literature to build an interpretation. In contrast, when adopting an efferent stance the reader focuses on

the information he/she intends to carry away from the text. These stances represent different ways for a reader to approach a text. In presenting the differing nature of the stances, Rosenblatt does not portray these in conflict. Rather the reader's responses represent points along a continuum. This study, however, expands on the problematical and complex issues of ways of responding to texts and what it means for elementary students to shift from one stance to another and how this affects their interpretation of the text.

Understanding what children do as they read/listen/write/discuss and respond to literature and pedagogical implications for enhancing students' reading processes and literary responses have engendered a substantive body of reader response research (Beach and Hynds, 1991; Cooper, 1985; Many and Cox, 1992). While researchers generally agree that the reading process is a transactional one and have elaborated on various facets of the reader, text, and context, important issues in reader response continue to be explored (Beach, 1998a; Rogers, 1999), particularly the complexity of stance (Newton, Stegemeier, Padak, 1999) and the readers' construction of the narrative world (Beach, 1998b; Benton, 1992; Enciso, 1992).

The thrust of this qualitative study was three-fold. It investigated the efferent-aesthetic stances which four fifth-grade students adopted in transaction with a narrative text in three learning contexts, a student-led discussion group, a story map activity, and written responses. It examined the particular responses which the students generated as they negotiated meaning with the narrative text, for example, responses in relationship to the story world. Primarily, it addressed deeply important questions about shifts from aesthetic to efferent stances for the four elementary students. In a larger sense, this study extends and challenges Rosenblatt's notions of the reader's construction of textual meaning along an aesthetic-efferent continuum.

LITERATURE REVIEW

In contrast to earlier literary theorists, Rosenblatt (1978) recognized the active role of the reader and his/her choice of stance in transaction with the text in a particular context. The text presents a set of linguistic, conceptual, and referential stimuli. The context encompasses the broader cultural matrix as well as the particular "socially molded circumstances

and purpose of the reader" (1985b). The reader, aware of and part of the context, infuses meaning into the textual squiggles and early in the reader-event selects, either consciously or unconsciously, a predominant stance. Awareness of the complexity of these stances has implications for understanding what occurs in classrooms: the mismatch between the reader's aesthetic stance and efferent expectations, the problematic use of the efferent stance with regard to the teaching and testing of literature (Rosenblatt, 1978), and the multiple kinds of reader responses to the story world (Enciso, 1992).

Rosenblatt (1978) expresses her line of thinking about complex issues of demarcation between aesthetic and efferent reading:

Actually, no hard-and-fast line separates efferent — scientific or expository — reading on the one hand from aesthetic reading on the other. It is more accurate to think of a continuum, a series of gradations between the nonaesthetic and the aesthetic extremes. The reader's stance toward the text... may vary in a multiplicity of ways between the two poles" (p. 35).

Furthermore, a text may be read efferently or aesthetically for different purposes, and parts of the same text may elicit different stances. A reader with a predominantly efferent stance may pay some attention to qualitative overtones while a reader with a predominantly aesthetic stance may focus on some cognitive elements. Rosenblatt considers most reading as "hovering" near the middle of the continuum (p. 21). However, readers may also experience stances at the extreme ends of the continuum. On one end, the efferent reader may be so absorbed in extracting information from a medicine bottle that she excludes subjective awareness. The aesthetic reader, on the other end, may be so immersed in living through the narrative that he may not process extraneous information in the text.

Rosenblatt (1978) presents the role of the reader as having to "learn to handle" stances to texts as he/she shifts from aesthetic to efferent reading (p. 37). Nevertheless, the aesthetic stance is not accessible for all. While some readers may adopt an aesthetic stance intuitively or because of early background, other readers have not developed the capacity to read aesthetically, perhaps because of the emphasis on efferent reading in the schools. Regarding the transactional process and children, the

teacher is responsible for developing students' awareness of efferent and aesthetic stances and, additionally, guiding young students toward the appropriate stance for a given text.

Reader-response theorists and researchers have addressed the reader's roles/stances to the literary text. Britton (1982, 1984), for example, developed a framework for language use in which he made the distinction between participant-spectator roles in relationship to non-literary and literary discourse. According to Britton, language in the participant role is used to fulfill instrumental needs and participate in the outside world while language in the spectator role is used to contemplate events in the literary world. Britton (1984), in fact, claimed that his participant-spectator roles were similar to Rosenblatt's efferent-aesthetic stances, although she disavowed this (1985a, 1985b). Britton (1984) also conceded that discussion of stance entails "tricky" considerations. While a reader may maintain an overall spectator role/stance towards a literary text, the text itself may include material that in another context would be considered participatory.

Iser (1980a, 1980b), similar to Rosenblatt, discussed reading as a dynamic process in which the reader creates meaning in interaction with the text. He postulated that gaps in a text provide the impetus for communication in the reading process. They provide potentially illuminating moments for the reader:

What is missing from the apparently trivial scenes, the gaps arising out of the dialogue — this is what stimulates the reader into filling the blanks with projections. He is drawn into the events and made to supply what is meant from what is not said; it is the implications and not the statements that give shape and weight to the meaning (1980a, p. 111).

Smith (1992) conducted a study of the interpretative processes of 10 ninth-grade students, half of whom were reading below grade-level and half above grade-level on standardized tests, as they read two stories. He made the distinction between submission, the reader's passive acceptance of the text as the repository of meaning, and surrender, the reader's willingness to enter the world of the story and create meaning. Smith found that the less-successful students had an information-driven approach; they did not have the goals or the strategies to move beyond the immediate evocation, thereby submitting to the text's authority rather

than exercising an active role in shaping textual meaning. Smith asserted that "readers must assert power to have meaningful transactions with texts" (p. 144).

Rosenblatt and others have addressed the reader's relationship to the literary world. Rosenblatt (1978) presented, but did not develop, the phenomenon of aesthetic reading in which the reader crosses the boundary from the actual world into the "new" world:

The physical signs of the text enable him [the reader] to reach through himself and the verbal symbols to something sensed as outside and beyond his own personal world. The boundary between inner and outer world breaks down, and the literary work of art... leads us into a new world. (p. 21)

Britton (1984) also recognized the issue of the reader's focus of attention in literary discourse. Citing Langer (1953), he emphasized the importance of stance at the outset of the reader's encounter with the text, how the reader, in effect, switches or breaks with the outside environment:

The illusion of life is the primary illusion of all poetic art. It is at least tentatively established by the very first sentence, which has to switch the reader's or hearer's attitude from conversational interest to literary interest, i.e., from actuality to fiction. (p. 213)

Benton (1992) explored the nature of the literary world, or "secondary world," and the "narrative voices" which the reader creates in a dynamic process of evocation and response to the text. Benton describes this metaphorically as a reader stepping into a three-dimensional virtual world. The reader's depiction of this world is constantly being created, involving both imaging and imagination. According to Benton, it is of critical importance for educators to gain a clearer understanding of what constitutes the child's creation of the secondary world and to recognize the dialogism of reader response which concerns itself both with the language of the text and the response of the reader in order to better understand the literary process.

Enciso (1992), based on her research with six fifth-grade students, examined the complexity of the phenomena of the reader entering the story world and developed seven main categories and 20 subcategories of participation. Two of the categories include: "Readers' descriptions of

the distance between themselves and events in the story world," and the subcategories include: "Midst, Distant observer, Close observer,"; and "Readers' descriptions of associations between themselves and the characters or events in the story world," and the subcategories include: "Empathy, Identify, Merge, Feel close." Enciso's study lends support to the transactional model of reading which views the reader as an active constructor of meaning. Enciso concluded that the range of readers' text comprehension is "far richer" than previously described. As educators, it is important to delve into issues of readers' engagement with the text. "Meaning, learning, or any kind of synthesis of experiences may not arise at all until the reader has entered into — and become engaged with — the story world," (p. 100).

This qualitative study, then, examines critical issues which Rosenblatt and later theorists have recognized as meriting further exploration. It closely examines stance from the viewpoint of four fifth-grade students as they negotiated textual meaning within three classroom learning contexts. It examines the responses the students generated to a narrative text, particularly their responses to the story world. Additionally, this study focuses on issues of shifts in stance and the accessibility of shifts for individual students. In essence, this study builds on valuable insights gained in reader-response theory, and it calls for a more comprehensive theory to account for the data presented here.

METHOD

A case study was selected as the framework to investigate the complex phenomena of four fifth-grade students' negotiation of textual meaning across three language arts activities. This methodology (Lincoln and Guba, 1985) provides the opportunity to focus on and explore in-depth four students' actions and interactions in varying contexts; thus, a group of four students' negotiation with the text was selected out of a larger class study. The group participants were selected as part of "purposeful sampling" (Patton, 1990) because of their differences in gender, academic, socioeconomic, and special needs backgrounds. Given the limitations of the data to represent stances and responses to one narrative during one session of activities, these results are presented as a seed to encourage further questions about and examination of reader stance.

Setting and student participants

A fifth-grade class of 25 students in a public school located in a suburban area was the setting for this study. The student participants in the study were Mark, a boy who was labeled as an inclusion student with average ability and severe language processing problems (except auditory); he was not given an Iowa reading test. Other students included: Kris, a girl with low-average reading ability on standardized reading assessment who had a reading stanine of 4; Jean, a girl with very high reading ability on standardized reading assessment who had a reading stanine of 8; and Ned, a boy with high reading ability on standardized reading assessment who had a reading stanine of 7. (The Iowa scores are represented in a range of 9 stanines with 9 at the upper end.) The students came from heterogeneous socioeconomic backgrounds: two students qualified for free/reduced lunch, one student was from a middle-class background, and another student was from an upper-middle class income level. One student's ethnic background was part Native-American, and the remaining students were Caucasian. The students' parents had varied educational attainment levels, non-high school completion, high school and college graduates.

Mrs. H., the fifth-grade classroom teacher, was an experienced elementary teacher who was also working towards a master's degree in educational administration. The researcher was a professor with a specialization in language and literacy.

Literary selection

Androcles and the Lion (Paxton, 1991) was selected as the narrative focus for the project because of the alignment of the district-mandated curricular topic of Attractions with the book's topic, the friendship between superficially dissimilar central characters, as well as high quality illustrations (Rayevsky) and content which was thought to spark interest and discussion. *Androcles and the Lion* is a retelling in verse of an Aesop fable about Androcles, a young boy, who assists a lion with a thorn in his paw. The lion later saves Androcles' life when he is in danger, and then both are set free.

PROCEDURE

Students' prior experience with language arts activities

During the fall semester, students responded to literature in language arts activities, peer-led discussion groups, story map activities, and responses to questions about the narrative, which were later included in the sessions for observation and analysis in February. A brief description of these activities will be presented in the context of the reading and language-arts program.

Students responded to literature daily during silent reading, journals, and peer-led discussion groups. Students' responses in the peer-led discussion groups were a major component of the language arts program. Students selected their own topics and were encouraged to respond with open-ended responses; however, they were also provided with some structure to guide them. The students brought their journals to the discussion groups and used their entries as starting points for their discussions. Each student could select a prompt(s) to focus on from the following *Literature Response Prompts*: "I was surprised by... I didn't understand when... made me feel because... I began to think of... I wonder what would happen if... The relationship between... I'm not sure... reminded me of." Mrs. H. also scaffolded students' responses to literary elements such as plot, character, and setting. Peer-group participants filled out a daily self-assessment form in which they noted questions, predictions, and comments. Neither the journal entries nor the literature study group sheets were graded, although Mrs. H. read both as a running check of student contributions.

The story-map activity was implemented approximately four times prior to the study, and thus students were familiar with the protocol. During this activity, students worked as a group to fill in one answer for each category on the worksheet, and afterwards groups presented their answers to the class. The students' story-map worksheets were generally graded.

The comprehension questions for the written-response activity in the study were similar to the kinds of questions students responded to in oral and written form in class. Mrs. H. asked questions to probe students' thinking when she visited the discussion groups on a rotating basis and she also asked questions for assessment, generally in written format. The written responses were sometimes graded.

Study

The research was conducted for two sessions in February with the fifth-grade class divided into six groups; however, one group of four students' responses during one session was selected as the focus of this study. At the outset, the fifth-grade class listened to a teacher read-aloud of *Androcles and the Lion*. A read-aloud was chosen as the format to present the narrative text, rather than silent reading, in the hope that it would be understood by all the students. Mrs. H. used skills of dramatic interpretation to engage the listeners in aesthetic responses to the texts.

First, Mark, Kris, Jean, and Ned discussed their responses to the narrative in a peer-led discussion group for approximately forty minutes. Second, the group members participated in a story map activity for approximately half-an-hour. The students wrote responses relating to the text structure of the read-aloud on a story map worksheet according to the categories of "Title, Author, Setting, Characters, Time, Place, Describe Setting, Problem, Events Leading to the Solution, and Solution." Third, students wrote individual responses relating to *Androcles and the Lion*. The questions called for the following responses: the names of the characters, the lesson of the story, sequencing of Androcles' first and subsequent thoughts about the lion, adjectives to describe Androcles' character, and describing an analogous situation to the one in the story.

Data collection

Data were collected for the students' stances and responses to *Androcles and the Lion* in the three post-read aloud activities, a peer-led discussion group, story map activity, and written responses. The data for the discussion group and the story map activity consisted of observations and videotapes/transcripts. The written materials included the four students' story-map worksheets and the four students' written responses to six questions.

Analysis

The videotapes and transcripts of the four students' peer-led discussion group and story map extension activity, and the written materials, the story map worksheets and the written responses, were reviewed multiple times in order to map patterns of student-generated stances and responses to the narrative within the learning contexts. The students'

stances were examined according to Rosenblatt's (1978) definitions. When adopting an aesthetic stance, a reader brings forth feelings, thoughts, sensations from within him/herself while attending to textual stimuli to create meaning; he reflects about the evocation as well as elaborates and shapes ongoing responses. The reader's focus is on the literary experience during the reading event within a particular context. In contrast, a reader who adopts an efferent stance closes down affect and overtones of meaning within a particular context; she employs selective attention to extract information from the text for a purpose to be achieved after the event.

Students' responses in each learning context were examined for the kinds and variety of topics, how these were implicated in students' negotiation of textual meaning, and how they related to stance. The students' responses in the discussion group clustered according to broad categories of student-generated topics: affective, sensation/language, visual, literary elements, characters' perspective, and metaliterary. The students' responses in the story map activity tended to focus on the worksheet categories, such as "problem, solution." The students' written responses focused on the questions which elicited character descriptions, lesson of the story, providing an analogy.

The learning contexts were examined with the understanding that prior class participation in classroom language arts activities provided students with predispositions to adopt certain kinds of stances. The following dimensions of the learning contexts were investigated: student-generated versus externally-developed topics, open-ended textual exploration versus search for specific information, multiple versus single interpretation considered acceptable, individual versus group response, and non-graded versus graded activity. In addition, each learning environment was not considered discrete but rather it was understood that participation in the preceding language arts activity(ies) influenced the following activity in the sequence.

RESULTS

As the students began to interpret the narrative *Androcles and the Lion* in their peer-led discussion group, the students appeared to exhibit an aesthetic stance. In the subsequent activities, many students shifted to an efferent stance with the goal of locating specific textual information

and producing the “right” answers. The students’ stances and responses, and relationship to the story world, will be discussed for each language arts activity.

Discussion group

During the discussion group, the students adopted an aesthetic stance which focused on the lived-through experience. Their responses fell into the following categories: 1) affective/express feelings, like book because, pull reader into text; 2) language/rhyme, word use; 3) visual/color, illustrations; 4) literary elements/theme, genre, text opening, ending, length, use of time, ellipsis, plot; 5) character’s perspective/motivation, emotions; and 6) metaliterary/compare book to other books, change anything in the text, discuss how to interpret books. The students’ opening responses, their discussion of text ellipsis and illustrations, and variation in responses to the story world will be presented.

In their opening responses in the discussion group, the students, Ned [N], Kris [K], Jean [J], and Mark [M], positioned themselves in relation to the text. Britton (1984) noted the importance of reader stance with the initial encounter with the text:

N: I liked the book because it’s, I like the moral of the story, and [express feeling]

It’s ok, and I like how when the lion, ‘cause a man helped the lion [theme]

Take a thorn out of his paw that he didn’t attack the man, he knew the man. He started licking his hand. [character’s perspective]

K: I like the book how he just came running from his master [express feeling] and he was wondering what was the noise. [character’s perspective]

He finally figured out what made all the noise. And, I liked how it rhymes in the poem. [language/rhyme]

J: I liked how it rhymes in the poem, too. [express, feeling, rhyme]

I also liked how he helped the lion and then how the lion didn’t do anything to him. He just licked him. [theme]

Ned linked his positive affect first with an overview of a central literary theme and then he made a statement about the character's perspective [lion] while he was performing an action in the story, "he didn't attack the man, he knew the man." Kris's initial responses suggests she identified with Androcles as he was fleeing, and she used two verbs to pinpoint what Androcles was thinking, "wondering," and "figured out." Jean discussed the rhyme and the characters' actions, their reciprocal support which related to a theme of the fable. Mark, the student who was labeled as inclusion, did not make many remarks in the discussion; however, the remarks he made were relevant to the topic. Mark's initial responses were that he liked the book, and he liked "how they [the characters] got along," focusing on the characters' emotional interactions.

The students' initial responses suggest they were engaging with the characters' feelings and actions. At the same time each student's response had an individual accent. Ned's responses might be characterized as "hovering" along the continuum (Rosenblatt, 1978). While he entered the characters' feelings and used his imagination, he also had overtones of efferent reading. Jean, while responding aesthetically, discussed the characters' actions rather than feelings. Mark's comments focused on the gist of the narrative.

Kris's responses indicate that from the beginning she was operating in the story world in the "merge" association with the characters and events, that is, "feeling like one has become the character or a part of the setting" (Enciso, 1992, p. 92). Kris appeared to place herself in the character's perspective. Throughout the discussion, Kris's remarks continued in this vein. Later she said, "I think how he [Androcles] took out the thorn he must have felt like he was the owner of the lion." When the students discussed what they might do to change the text, Kris said, "Maybe I'd tell a little bit how the guy, the man, rode on the lion to get back to his master." Here Kris appeared to envision events not stated in the text; she appeared to be living in the story world. Kris described how she felt pulled or grabbed into the text, "I really liked the book because it grabs your attention." Langer (1953) discussed how the reader, in effect, switches to enter the story world, and Kris's responses suggest that she switched into the story world.

The students next addressed text ellipses, gaps in identifying the characters and gaps in the plot. Iser (1980) said that gaps in the text are critical spaces for the reader to fill in meaning. Ned queried, "Did you

like how the story never tells who the master really was? It just said master and said at the end the emperor was there. It never said how he got there." Kris shared her viewpoint about Androcles' action, "Maybe he could have ran with the lion." The students later picked up the thread of ellipsis in the narrative and referred to it as skips. Jean developed this concept, "Yeah, on one page, it shows they're in the jungle. The next page, he was back home immediately. It doesn't show how he was walking home." Mark commented about how the text was produced, "They cut out some stuff."

The students' discussion of illustrations led to a discussion of literary interpretation. Ned's first response to the illustration was, "I like the pictures, big, huge." Later, Ned advanced an alternate viewpoint: he prefers a book without pictures because it encourages the reader to actively use her/his imagination. In a book with pictures, the language is not telling you what to picture, the pictures are showing you. Kris, on the other hand, stated that with pictures you can still imagine; however, when you don't know what something looks like, the pictures can show you.

N: I would rather have a book without pictures because if you are reading a book without pictures, you can imagine.

K: You could still imagine.

N: It's not telling you what to picture in your mind. You could picture a lion in your mind, and the lion could be bigger, but in a picture it shows you.

K: ...But what if it has blue eyes and long blonde hair, you wouldn't really know how to describe it?

N: That's the fun of it.

In this statement, Ned expressed his feelings about his transaction with a literary text, how using his imagination is "fun." Similarly, Iser (1980b), conceived of reading as "only a pleasure when it is active and creative" (p. 51).

In the final part of the discussion, Kris presented what she thought Androcles was feeling when he ran away. Ned disagreed with her and said that the text did not provide that information. Kris maintained that the text explained why Androcles ran away. However, as she and Ned talked, she realized that the text was not explicit.

K: He [Androcles] was kind of sad because his master was yelling at him, making him do stuff that he didn't want to. He ran away and he heard this weird noise.

N: You see, that's just my point. He [the author] didn't tell you why he ran away.

K: Yes, it did. It told you in the book.

N: He didn't say why he was running away.

K: You'd probably have to feel it.

N: That's my point. It makes you fill in the blanks.

K: That's kind of like a picture book and not a picture book. First you've got to think in your mind, and then you don't... It's kind of a challenge...

N: That's the point. It makes you fill it in yourself, the story with blanks. You fill in the blanks yourself.

K: Choose your own imagination.

In this passage, Kris offered that in order to experience the text you have to "feel it." According to Ned and Kris, the reader thinks, fill in overtones and empty spaces, visualizes, feels, and uses one's imagination when creating a literary interpretation. They enunciate in many respects the reader's active role in creating meaning developed by Iser (1980a, 1980b) and Rosenblatt (1978).

Story map activity

The story map activity illustrates problematic issues relating to students' negotiation of stances across activities, from the aesthetic stance of the discussion group to the efferent stance of the story map worksheet. Only one student, Ned, shifted to an efferent stance and successfully negotiated the story map activity. During this activity, students followed prior class protocol with story map worksheets and functioned as a group. They focused on text elements as determined by the worksheet categories with the aim of arriving at answers which would be evaluated later. While frequently disagreeing about particular items, the students reached consensus by the end of the activity and filled in similar wording on the slots.

The students wrote the following items on the worksheet: Title, "A. and the lion"; Author: [blank]; Setting: [blank], Characters: "lion, boy,

the master"; Time: [blank]; Place: "ancient Greece." For the several of the items, Kris, Mark, and Jean wrote the following items on their worksheet: Problem: "A. ran away from his master" Solution: "He got free." Ned's responses were somewhat different. He wrote: "Problem: The lion had a thorn stuck in his finger and A. ran away"; and for Solution, he wrote: "The lion licked his hand the emperor let A. go."

Jean appeared to adopt an efferent stance in the story map activity, recognizing that the worksheet required the "right" answers. She raised issues, however, about the fit between the responses students were writing for the efferent categories Problem and Solution on the worksheet and their lack of compatibility with the meaning for *Androcles and the Lion* as discussed in the aesthetic discussion group. She repeatedly expressed concern about the Problem and Solution categories:

J: What was the Problem?...

K: The Problem was that he ran away from his master.

N: The Problem was the lion had a thorn in his finger.

J: But that's not the main Problem.

Near the end of the activity, Jean said, "I don't even remember the story now. I'm getting messed up." Jean admitted that she was confused, possibly by trying to recall the specific information required on the worksheet after participating in the open-ended discussion group. She may also have been distracted by the story map discussion itself which focused on extracting information rather than trying to arrive at a larger meaning. Finally Jean said, "I don't know what to put down for Solution... I'll just put down: 'He got let go.' I don't know." She appeared to adopt the attitude that she was going to accede to the group decision, although she could see that fitting the narrative into the narrowly defined categories was problematic.

Mark's stance during the story map activity cannot be determined because he did not participate in the discussion. He wrote the answers others were writing on their worksheets.

Kris was the student who most clearly illustrates the student caught in a bind of reading creatively in an efferent context. Kris apparently did not see that her interpretation did not fit smoothly into the categories on the worksheet or refer to the explicitly stated lesson in the text which referred to helping one another. Kris continued in the story map activity with the textual interpretation she mentioned in the discussion group of the theme of Androcles' running from his master. Because the group

agreed to put Androcles' running away as the Problem and getting free as the Solution, this may have confirmed for her that this was the narrative's central theme. She appeared satisfied with the Problem and Solution categories and explained her response to the Solution, "He [Androcles] got pushed to the ground and came over and the lion licked him and the master said he was free." Her worksheet responses probably would not be graded as acceptable in terms of a standard interpretation of the fable.

Ned appeared to adopt an efferent stance to the worksheet while locating information from the text. At the same time, he rejected the validity of the story map categories. He apparently understood that the dichotomy, Problem, and Solution, as presented on the story map sheet had little to do with the theme of Androcles and the Lion. When Jean kept asking him about the meaning for the Problem and Solution, he finally said: "That doesn't matter. The moral is the matter, 'What goes around, comes around.'" Ned appeared eager to fill in the blanks as quickly as possible in order to complete the task.

Written responses

The students' written responses illustrated problematic issues relating to students' negotiation of shifts in stance both across activities and shifts in stance within the written response activity itself. The written response questions elicited both efferent and aesthetic responses. The six questions and the students' responses will be discussed sequentially.

The first question asked the students to name the two main characters. The four students' efferent responses provided the characters, "Androcles and the lion."

The second question asked students for the lesson of the story. The students wrote:

What was the lesson of the story?

M: If you help someone they will help you.

K: The lesson of the story was to never ran away from your master.

J: Treat people the way you want to be treated.

N: To treat others the way you want to be treated.

Three students' responses, Mark, Ned, and Jean, could be considered efferent because they paraphrased information from *Androcles and the Lion*. The Lesson" was stated at the conclusion of the narrative: "The

lesson we might learn/Is, when we help another,/He will help us in return" (Paxton, 1991, p. 5). Mark, for example, wrote, "If you help someone they will help you." Ned and Jean stated, "Treat others the way you want to be treated." Taken from another perspective, their stance could be considered aesthetic in the sense that the students had generated the topic of a man helping a lion and the lion helping a man as a central issue in the [aesthetic] discussion group. A third possibility is that the aesthetic and efferent stances overlapped; the students indeed remembered the quote from the read-aloud, they also thought this was the main theme. Interestingly, these three students appeared to discount the Problem and Solution categories on the story map worksheet when they discussed the lesson.

Kris's aesthetic stance in her response to this question appeared to be consistent with her close identification with Androcles' perspective which she expressed in the discussion group and story map activity. She enunciated a different theme from the three students and from the "lesson" expressed in the narrative. Although she may not have had the skills to express it elegantly, she appeared to interpret the lesson of the fable as Androcles' flight from slavery and attainment of freedom. She wrote, "The lesson of the story was to never ran away from your master." Although many readers would say that it is not the primary theme, Kris's interpretation of attaining freedom is certainly a theme running throughout the fable.

The third and fourth questions asked students to sequence Androcles' initial and subsequent thoughts after he met the lion. These questions could be considered efferent because they requested specific information from the text. The three students sequenced the items according to the story line while Kris reversed them. Kris's responses could be interpreted in several ways: possibly she was not attending to the exact time frame because, one might conjecture, she was immersed in the story world; she could not remember the information after the intervening discussion and story map activities; or she inadvertently juxtaposed the responses.

The fifth question asked students to describe Androcles as a person. This question was primarily aesthetic, asking students to call up their individual responses to the character. They described Androcles as "nice, kind."

The sixth question asked students to think of a situation where it would be important to remember the lesson from the story. This question was open-ended and supported a creative response. Three students provided responses relating to interpersonal situations. Mark's response appeared most closely aligned with the theme of helping someone in need, "you help," while Ned wrote, "When you are making fun of someone," and Jean wrote, "when you don't like someone." Kris, on the other hand, focused on the theme of liberty, "He could of begged the master to be free and wild."

In this activity, three students were able to negotiate the shifts in stances of the questions, while one student, Kris, did not sequence plot events in the correct order or provide the literal lesson of the fable. She maintained a predominantly aesthetic stance consistent with her interpretation from prior activities.

DISCUSSION AND IMPLICATIONS

This case study illustrates four elementary students' stances and their responses to a narrative text in three learning contexts. The major finding from this study is that shifts in stance were not accessible for all four students in the three post-read aloud activities. Three students' responses suggest that while they adopted predominant stances in each of the activities, they also, according to Rosenblatt's construct, maneuvered along a continuum selecting a gradation of stance in an on-going basis while responding to the text. However, one student did not bridge the stances and shifted back and forth. For this student, the shift to an efferent stance appeared to be in conflict with her participation in the story world.

What were the characteristics of the reader in this study who maintained an (almost) consistently aesthetic stance? Rosenblatt recognized the aesthetic reader at the extreme end of the aesthetic continuum as one who is "so completely absorbed in living through a lyric poem or may so completely identify with a character in a story that nothing else enters consciousness" (1982, p. 270). Kris, the reader, appeared to exemplify the "midst—reader in the midst of the story world; there somewhere," and "merge—feeling like one has become the character or a part of the setting" levels of participation in the story world (Enciso, 1992, p. 91). Kris's aesthetic responses to efferent questions in the written response

activity did not indicate lack of comprehension but rather her participation in the narrative world and close identification with the character, Androcles. One may conjecture that once a reader suspends disbelief and enters the story world, she may not be able to step in and out of this world, and, for such a reader to go from the aesthetic world to the efferent world, may be to negate the other. Kris appeared to exemplify the characteristics of this aesthetic reader.

Kris's stance and her responses, thus, do not suggest a point moving along a continuum. Her predominant stance to the text, in fact, suggests a conflict or break from inside and outside the story world. On the other hand, at times in the discussion, she discussed literary concepts, such as illustrations, plot development, with other members of the discussion group. These instances, then, suggest a complex array of behaviors. All four students' stances and responses, in fact, indicate the complexity of reading. Ned's stances, as well, might more accurately be described as not hovering at a point along a continuum. These data call into question some of the assumptions of an aesthetic-efferent continuum and ask us to re-envision our understanding of reading. The students' transactional reading process might alternatively be viewed as the reader surrounding the text and adopting a stance(s), imaging and imagining, and taking and appropriating what he/she needs to construct meaning.

Listening to the students as they developed text understanding provided insight into how they viewed the reading process. In the discussion group, Kris and Ned formulated their ideas about reading. They discussed reading as actively constructing meaning by imaging and imagining, filling in gaps, thinking, feeling, and engaging with the text. Many of the ideas which they originated have also been discussed by reader-response theorists (Benton, 1992; Britton, 1982; Iser, 1980b; Rosenblatt, 1992; Smith, 1992).

Several additional patterns emerged from this study which support our understanding of reader response. In their transactional relationship to the narrative, the readers, the text, and the context played a role in creating meaning. In their initial responses to the text, the four students in the discussion group adopted an aesthetic stance in which they responded effectively, "I liked the book..." They felt hooked into the text and used visceral expressions such as, "[it] grabs my attention." Britton, 1984 noted the initial stance is important when drawing the reader into the narrative. In addition, story liking is related positively to

readers' willingness to engage with texts (Beach and Hynds, 1991). The students' responses to textual aspects such as incongruity and ellipsis appeared to be factors which influenced their engagement with the narrative. Beach and Hynds (1991) noted, "readers take more time to make inferences about stories in which information about characters' plans, goals, and states is deleted" (p. 469).

The four students' aesthetic stance and their responses in the peer-led discussion group, both in scope and content, were consistent with studies (Cox and Many, 1992b; Many, 1990; Many and Wiseman, 1992) that suggest that an aesthetic approach promotes students' high levels of literary understanding. Approaches which incorporate teaching literary elements with an aesthetic orientation support students' wide "repertoire of response strategies" without diminishing their aesthetic responses (Many, Wiseman, Altieri, 1996).

The context of the discussion group itself provided cues for the aesthetic stance. The students had prior experience with self-selecting topics and reflecting on their responses in literary peer-led discussion groups which were ungraded. The students' predominantly efferent stance of the story map activity and the mixed efferent-aesthetic stance of the written response activity were influenced by prior class protocols for these activities which emphasized search for the "correct" answer in a frequently graded activity. Asking students to respond creatively to a literary text in one activity and then respond efferently in a subsequent activity[ies] raise questions about whether/how such activities nurture or nullify, "foster or impede" (Rosenblatt, 1986, p. 126) the aesthetic evocation. This study then illuminates a critical educational issue of a student reading creatively versus the contextual demands of reading for specific information.

While Rosenblatt saw the context as static and focused her attention on the individual reader's transaction with the text, a more inclusive reading theory needs to account for the dynamics of evolving contexts and the dynamics of a group of readers encountering a text. As the students infused their ideas into the discussion of the relationship of illustrations of textual meaning, they were shaping each others' ideas and the context itself was changing.

Rosenblatt (1938, 1978, 1980, 1986) advanced her theoretical framework as a model for practitioners to re-envision the teaching of literature. She (1980) explicitly stated guidelines for not using literary

texts to request factual information, teach decoding/reading skills, and impute there is one correct interpretation. Attention to formal text elements should be placed within the context of the total literary experience and knowledge about these elements should not be used as assessment devices. Post-reading activities should be designed with the goal of heightening the literary experience, returning to the text and providing formats for the during-reading responses.

Pedagogical implications suggest that students should have experience with a wide variety of reading materials and writing experiences. Literary and non-literary texts should be selected both by teachers and students (Hosenfeld, 1999) with the goals of finding texts which engage students in meaningful ways. Students who have a wide range of exposure will then have opportunities and motivation to read from varying stances. Educators need to develop an awareness of stance — aesthetic, efferent, and its many permutations — and incorporate this awareness when planning curriculum and instruction. Teachers need to examine the cues for stance which various learning environments elicit. They should model ways of approaching texts from different stances in order to scaffold students' reading skills.

Given the significance of the aesthetic experience for the creative spirit, teachers need to nurture the aesthetic literary experience. In spite of the recognition of the value of literature-based curricula in some school districts and perhaps because of the countervailing emphasis on standards-driven curricula, the aesthetic stance continues to be neglected or even nullified in the educational system. Children need time and space to savor the aesthetic experience and develop their own interpretations.

The student needs to be given the opportunity and courage to approach literature personally, to let it mean something to him directly. He should be made to feel that his own response to books, even though it may not seem to resemble the standard critical comments, is worth expressing (Rosenblatt, 1938, p. 81).

Additionally, educators need to reconsider current procedures for reading comprehension assessment. A student's reading comprehension level should not be evaluated as substandard on the basis of his/her providing an alternative interpretation of the text. Educators need to recognize individual variation in negotiating stance and be aware that shifts in stances across and within activities are not readily accessible for some

children and may, in fact, be in conflict. While a long-term goal is to expand students' repertoire of stances toward a text, at the same time it is important to recognize the integrity of the student who has an intense aesthetic transaction with a text and is living in the story world.

This study, in many respects, calls for us to rethink Rosenblatt beyond the continuum, to develop research which asks new questions about stance and which adds to our understanding of students' efferent and aesthetic reading.

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Mothers' prosodic features: Strategies to guide young children's understanding of book language

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ABSTRACT

Mothers use prosody to engage children during book reading. Thus, prosody may contribute to children's literacy. The purpose of this study was to describe how twenty-five mothers across children's age groups (6-month olds, 12-month-olds, 18-month-olds, 24-month-olds, and 4-year-olds) used prosody, specifically pitch and stress variations, while reading with their children. Common speech samples from the readings of two different texts (narrative and expository) were analyzed. In addition, the mothers were questioned about their use of expressive language while reading. Patterns from the data showed that the mothers of the 6-month-olds did not vary their speech as often. They used the book reading event to teach basic book reading concepts and to play. The narrative text showed the use of more expressive language. The mothers' intent was to guide children's understanding of the complexities of the story. All the mothers used pitch and stress in conjunction with other book reading strategies to scaffold the texts for their children.

Caregivers use prosody, the rhythm and melody of the voice, to engage and stimulate children to participate in book reading. For example, caregivers, and in this case mothers, may use prosody to emphasize important concepts in book language (print and illustrations) that may otherwise be difficult for children. Prosody can also be used to dramatize a character's part in a story so children can live the events with characters.

The prosodic features of the voice are among the first linguistic variations to be learned by children that guides oral language acquisition

(Buss, 1984; Fernald, 1984; Fernald and Simon, 1984; Gerken and McIntosh, 1993; Lewkowicz, 1996; Mandel, Jusczyk, and Nelson, 1994). Researchers also contend that the prosodic features of the voice may guide children's knowledge of how language works in books, and ultimately, contribute to children's literacy development (Altwerger, Diehl-Faxon, and Dockstader-Anderson, 1985; Buss, 1984; Dowhower, 1991; Schreiber, 1980; 1987; 1991; Snow, Coots, and Smith, 1982). Therefore, the purpose of this study is to describe how mothers use prosody to add meaning to text for their children during book reading events.

Theoretical frame

Vygotsky (1986) described how caregivers scaffold information for children from a social-cultural perspective. From these rich social interactions, caregivers create "zones of proximal development" where children can easily connect their world experiences to new information. Prosody is one of the tools that caregivers use to familiarize children to the language of texts, to draw children's attention to new concepts in texts, and to develop children's understanding of how stories develop.

Prosody effects language (oral and print) development

Marked prosodic variations are a characteristic of "motherese," a simplified speech register used by caregivers to guide children's oral and written language development (Dowhower, 1991). Mothers may use a higher pitch, stress words, or use a slower tempo to enhance children's understanding of how language works. In the process, children are able to focus on important language concepts, thus assisting them in understanding syntax. Hence, mothers' use of prosody increases infants' communication, engages their attention, stimulates speech processing, and the comprehension of language (Fernald, Taeschner, Dunn, and Papousek, DeBoysse-Bardies, and Fukui, 1989; Nelson, Hirsh-Pasek, Jusczyk, and Cassidy, 1989).

Caregivers have also been observed using prosodic variations to emphasize concepts while telling stories to young children using books. Fernald and Mazzie (1991) compared how 18 mothers changed their speech patterns while telling stories to 14-month-olds and to adults. To guide the story telling, a picture book was used in which six target items were the focus of attention. In the infant-directed story tellings, the mothers consistently used exaggerated pitch tones with target words

from the text, whereas the adult-directed story tellings, the mothers' prosodic emphasis varied. Fernald and Mazzie (1991) believed that these marked pitch variations may not only facilitate speech processing for children, but highlight important concepts during book reading. It appears that caregivers not only use prosody to model for children how language sounds within the contexts of books but also to teach children about print.

Altwerger et al. (1985) observed two mothers as they read to their twenty-three month-old children over a six-month period. Only one of those mothers was observed using prosody to relay meaning to her child. While reading *Over in the Meadow* (Langstaff, 1957), the mother read, "OVER in the meadow where the tall grass grew lived an old mother red fox and her little foxes — too." Altwerger et al. (1985) concluded that the rising intonations suggest that more information follows. As repeated readings familiarize the child with the rhythm of the story, the rising intonations invite the child to participate. Although Fernald and Mazzie (1991), and Altwerger et al. (1985) contribute to our current understanding of mothers' use of prosody during book sharing with children, the nature of the role of prosody in book sharing transactions is limited to these two book sharing events, especially across developmental levels.

The prosodic features of interest in this study were limited to pitch, the perceived rise and fall of the voice, and stress, the perceived intensity of sound. Stress may be used to emphasize particular words or phrases. While reading *The Three Little Pigs*, mothers may read "Little pig, little pig, LET ME IN!" Stressing the last part of the sentence focuses the child's attention to what the wolf wants from the pigs. Perceived pitch variations also affect the way book language is understood. While reading *The Three Little Pigs*, mothers may read, "Little pig, little pig, LET ME IN!" in a low, gruff voice to dramatize the wolf's part in the story. Then the mother would use a higher pitch to act out the part of the pigs "NOT by the hair of my chinny, chin chin." Using the prosodic features of the voice adds depth to the meaning of this text for children. They not only understand important concepts, but the children are able to feel what characters feel.

The following questions guided this research project: a) How do mothers use pitch and stress, two prominent features of prosody, while

reading to children?; b) Does mothers' use of the prosodic features, pitch and stress, vary across children's ages during book reading?

METHODS/PROCEDURES

Twenty-five mother/child pairs from a large university in the Rocky Mountain region volunteered to participate in the study. The mothers were students from varied disciplines across the campus. Reading was a regular activity in their daily lives. Mothers' ages ranged from 21 to 29 years, with the exception of three in their early 30's. The mother/child pairs were divided into five comparison groups according to the ages of the children who were 6-, 12-, 18-, 24-month olds (plus or minus two months), and 4-year-olds (plus or minus 4 months) with five mother/child pairs in each group. Six-month intervals between the children's ages made it possible to systematically describe how mothers' use of prosody while reading to children may change from the early stages of language and literacy development. Observations of mothers with 4-year-olds demonstrated the changes that occur into the preschool years. Mothers were identified by use of a numeric code. For example, mothers of 6-month-olds were identified from 6a through 6e.

The book readings were conducted in a room equipped with a rocking chair and a small table where a specific book was placed for each book reading event. A video camera with audio equipment was mounted on the wall overlooking the rocking chair which recorded the book sharing events. To record aspects of mothers' voice patterns, a separate portable transmitting microphone was plugged into a wireless microphone transmitter that could not be viewed by the children. Data from the transmitter were recorded via a tape recorder in the next room. The mothers were instructed at each session to "share the book with your child as you would at home."

All twenty-five mothers participated in a pilot study to refine the procedures and to test the quality of the laboratory setting. Once the pilot study was completed and procedures were refined, three different book sharing events were scheduled for each mother/child pair within a two-week period. To assure that the texts selected for the book sharing events were typical selections that mothers in this study would make, the mothers selected texts that were easily accessible, inexpensive, and told stories. Hence, an effort was made to select these types of texts for the

three book sharing events. The three texts were not familiar to the mothers.

Unknown to the mothers, the first book reading event was used to reduce novelty effects, and the last two were used for analyses. Texts used in the two analyzed book sharing events were a narrative text, *One Teddy Bear is Enough!* by Ginnie Hofmann, and an expository text, *Farm Animals* by Hans Helweg. *One Teddy Bear is Enough!* is about a little boy, Andy, his teddy bear, Arthur, and a new teddy bear, Max. Arthur is jealous because of the attention Andy gives Max. While Andy is taking both bears for a ride in his wagon, Arthur pushes Max out of the wagon to get rid of him. In the end, Arthur and Andy find Max, and Arthur learns to share Andy's attention. *Farm Animals* describes animals that are found on a farm. The illustrations in both texts support the print. During the book readings, these texts were counterbalanced to control for potential ordering and text effects.

For analysis, an effort was made to find common speech samples of the printed text used by all or most of the mothers. Common samples of printed text were limited, because the mothers' texts were significantly different from the print in both texts. As a result, two phrases from each text were chosen for prosodic analyses: "Arthur pushed Max" and "Where's Max?" from *One Teddy Bear is Enough!*, and "baby goats" and "roosters crow" from *Farm Animals*. A custom programmed digital sound spectrograph was used in the analysis to describe the mothers' speech patterns. Data collection for mothers' use of pitch and stress while reading these samples of printed text to their children is described below.

Within one week of the end of the book readings, the mothers were invited back to watch the video of their book reading events. Periodically, the video was stopped and the mothers were asked questions about why and how they were using prosody to read with their children. Clips from these interviews are added in the results section.

Pitch

Perceived pitch variations in the mothers' voices were measured by first determining the mean fundamental frequency (Fo) of their voices. The fundamental frequency (Fo), the first harmonic of the vocal spectrum, reflects the number of glottal cycles per second of laryngeal function during phonation (Borden and Harris, 1984). The mothers' mean

fundamental frequency was derived from five unstressed, uninflected syllables judged to be representative of the habitual pitch of the individual's conversational speaking voice. These data were taken from taped interviews with the mothers. In this report, mothers' habitual pitch is referred to as the Baseline Habitual/Conversational Pitch (bl). The manner in which mothers used pitch, the perceived frequency of sound measured in Hertz (Hz), was determined by comparing mothers' pitch variations while reading to their children to their Baseline Habitual/Conversational Pitch (bl).

How these mothers varied pitch while reading the texts was demonstrated the following ways. First, to compare mothers' use of pitch across children's age groups, one syllable from each sample was used: "roo" and "ba" from *Farm Animals*, and "Max" and "pushed" from *One Teddy Bear is Enough!* Two measurements were collected from each syllable: a) the beginning syllabic frequency (bsf); and b) the peak syllabic frequency (psf) or maximum change in frequency variation. Once these basic measurements were taken, the pitch elevation difference (ped) was calculated to describe the difference between the mothers' baseline habitual/conversational pitch (bl) and the peak syllabic frequency (psf) within the text sample. Refer to Table 1. Second, spectrographic data showed how selected mothers within and across text samples used pitch to scaffold these text samples for their children. Refer to Figures 1-4.

Stress

Relative syllabic stress, determined by the spectrograph measured the intensity of the vowel peak of a syllable in decibels (dB) from an amplitude contour display, and syllable duration measured in milliseconds (Ms) (Borden and Harris, 1984). The decibel is a ratio, a comparison of the sound in question with a reference sound. More than one syllable was needed from each text sample to establish a standard by which to judge how these mothers stressed syllables and words while reading (Borden and Harris, 1984). Group comparisons of how mothers stressed syllables within text samples across children's age groups was not possible because many text samples were dropped as mothers altered text, and because the distance of the microphone that was secured to the garment on each mothers' shoulder varied. Consequently, the spectrographic data

demonstrated how these mothers used stress to scaffold text for their children. Refer to Figures 1-4.

RESULTS

This study described how mothers use pitch and stress while reading with young children across ages. The results showed that all of the mothers in this study used pitch variations and stress during shared reading with their children. Furthermore, how they used these prosodic features varied greatly, even within the mother/child groups. Nevertheless, a visual inspection of the descriptive data for mothers' pitch variations in Table 1 revealed patterns across samples and texts: a) Mothers' pitch did not vary within the text samples 46 out of 98 total reading times (47%); b) mothers of the 6-month-olds accounted for 33% of those times; c) mothers were more apt to not vary pitch (31%) while reading "goat" from *Farm Animals* and "pushed" from *One Teddy Bear Is Enough!*; d) mothers used more pitch variations (83%) while reading the sample "Max," e) mothers used the lowest pitch elevations to read "goat." In addition to the observed patterns, mother 6a made the highest pitch change (830 Hz) while reading "Max," a difference of 640 Hz from her baseline habitual/conversation pitch (bl), and five mothers' pitch dropped lower than their bl while reading "goats" (6c, 6d, 63, and 12d), and "pushed" (6c).

To show mothers' varied use of pitch and stress across as well as within children's age groups, two samples from each text were used. Two mothers of 24-month-olds were part of each sampling of text to show how mothers within children's age groups varied their pitch and stress. Spectrographic data of the text samples are shown in Figures 1-4. A description of these samples follow with mothers' book reading behaviors and comments that may explain why specific prosodic variations were used to scaffold text for their children and how prosody was used with other book reading strategies.

Table 1

A Description of Mothers' Pitch Variations by Text and Text Sample

<i>Farm Animals</i>								
<u>Text Sample (roo)</u>					<u>Text Sample (goat)</u>			
Mother	bl	bsf	psf	ped	bsf	psf	ped	
6a	190	195	195	005	165	200	010	
6b	200	200	225	025	340	340	140	
6c	215	260	260	045	200	200	015	
6d	200	170	205	005	170	170	030	
6e	180	270	340	160	175	170	010	
12a	220	260	360	140	255	255	035	
12b	210	250	250	040	305	220	095	
12c	200	230	375	175	200	200	000	
12d	190	215	300	110	170	170	020	
12e	195	205	395	200	215	355	160	
18a	190	210	270	080	315	315	125	
18b	185	230	230	045	240	385	200	
18c	195	--	--	--	225	325	130	
18d	230	265	365	135	275	275	045	
18e	190	585	710	520	175	270	080	
24a	205	235	235	030	225	460	255	
24b	170	220	315	145	175	175	005	
24c	230	225	325	095	245	245	015	
24d	195	245	200	050	170	220	025	
24e	190	215	375	185	200	200	010	
4a	175	225	270	059	180	180	005	
4b	190	200	240	050	210	210	020	
4c	195	170	220	025	210	210	015	
4d	175	180	245	070	185	185	010	
4e	225	195	295	070	230	230	005	

Text: One teddy bear is enough!

Sample: Where's Max? Mothers across age groups used the most dramatic pitch variations while reading the sample "Where's Max?" Refer to Figure 1. The sentence ended a question which usually elevates pitch. Nevertheless, the mothers chose to elevate pitch different ways while reading this sample which brought attention to the fact that Max was gone. Refer to Figure 1.

Table 1 Cont.

*One Teddy Bear Is Enough!*Text Sample (pushed)Text Sample (Max)

Mother	bl	bsf	psf	ped	bsf	psf	ped
6a	190	215	215	025	375	830	640
6b	200	270	270	070	360	360	160
6c	215	195	195	020	355	355	140
6d	200	270	270	070	395	500	300
6e	180	400	400	220	310	310	130
12a	220	515	625	405	405	680	460
12b	210	245	245	035	410	670	460
12c	200	280	280	080	345	405	205
12d	190	300	380	190	380	585	395
12e	195	350	350	155	--	--	--
18a	190	235	235	045	255	545	355
18b	185	205	205	020	575	625	440
18c	195	300	300	105	325	625	430
18d	230	315	315	085	515	695	465
18e	190	320	320	130	455	730	540
24a	205	250	250	045	350	585	380
24b	170	260	260	090	290	465	295
24c	230	495	550	320	450	595	365
24d	195	410	480	285	410	540	345
24e	190	270	270	080	480	655	465
4a	175	220	220	045	310	310	135
4b	190	495	585	395	375	580	390
4c	195	210	210	015	250	370	175
4d	175	215	195	040	335	560	385
4e	225	335	335	110	355	485	260

Note. bl=Baseline Habitual/Conversational Pitch; bsf=Beginning Syllabic Frequency; psf=Peak Syllabic Frequency; ped=Pitch Elevation Difference. The dash represents missing data.

Mother 24b (Bl=170 Hz) slightly changed pitch in the word "Where's" (220 Hz to 270 Hz). The word "Max" was started at 290 Hz, elevated to 465 Hz, and lowered to 245 Hz. On the other hand, the word "Where's" (-17 dB) was stressed and the word "Max" was elongated (.69 Ms). In contrast, mother 24e (bl=190 Hz) started the word "Where's" at 364 Hz, then quickly dropped to 320 Hz before elevating the pitch to 470

Hz to end the word. The child's attention was drawn to the word "Max" by a continual high pitch that started at 480 Hz, peaked on the phoneme "a" (655 Hz), and then continued at 580 Hz as the word was elongated before ending at 375 Hz. Mother 24e stressed both words "Where's" (-23 dB) and "Max" (-26 dB) similarly. The fact that mother 24e's bl is 20 Hz higher than mother 24b may explain why mother 24e consistently used a higher pitch while reading the sample. However, this does not explain why mother 24e dramatically changed pitch and read both words intensely. When asked about this particular frame of the story, mother 24e replied, "I wanted her to feel like this is more than a bunch of words ... that the story has feelings in it ... how sad it was that the bear was lost."

Mother 12b (bl=210 Hz) began the sample "Max" at 245 Hz and peaked at 670 Hz before finishing at 305 Hz. Mother 12b also stressed the word "Where's" by elongating the word and emphasizing the "s" in the word before finishing the sentence. In contrast, mother 18a (bl=230 Hz) focused her child's attention by gasping, pointing to the illustration and stating, "Look up here John, look, look," and then began reading at 530 Hz which elevated to 665 Hz on the word "Where's." The high pitch finished the word "Max" at 660 Hz. The word "Where's" was stressed (-17 dB) before reading "Max." Refer to Figure 1.

Sample: Arthur pushed Max. Refer to Figure 2. Mother 24c (bl=230 Hz) began the word "Arthur" at a higher pitch (315 Hz) then moved quickly to 245 Hz, peaked at 325 Hz and moved back to 215 Hz. The word "pushed," was raised again to 550 Hz. A high pitch was maintained for the word "Max" (405 Hz then 350 Hz). Mother 24c emphasized the "Ar" (-19 dB) in Arthur and the word "pushed" (-20 dB). More time was spent on the word "pushed" (.43 Ms) which brought attention to what Arthur had done to Max. After reading, mother 24c pointed to the picture and stated, "See that? He pushed him." This statement reinforced the reading of the event in the text sample. On the other hand, mother 24a (bl=205 Hz) began the text sample by pointing to draw the child's attention to the event and explained, "Ooooooh, what happened? He pushed him out!" Mother 24a emphasized the words "Arthur" (from 260 Hz, 380 Hz to 250 Hz) and "Max" (from 275 Hz to 310 Hz). These two words were also clearly stressed. Refer to Figure 2. Mother 24a stated, "I explained what I read first. He picked out that the

bear was being pushed out of the wagon and so... I went on reading because he was still with me."

Figure 1. Mothers' perceived pitch and stress variations across children's ages while reading the story: *One Teddy Bear Is Enough!*; Sample: Where's Max?

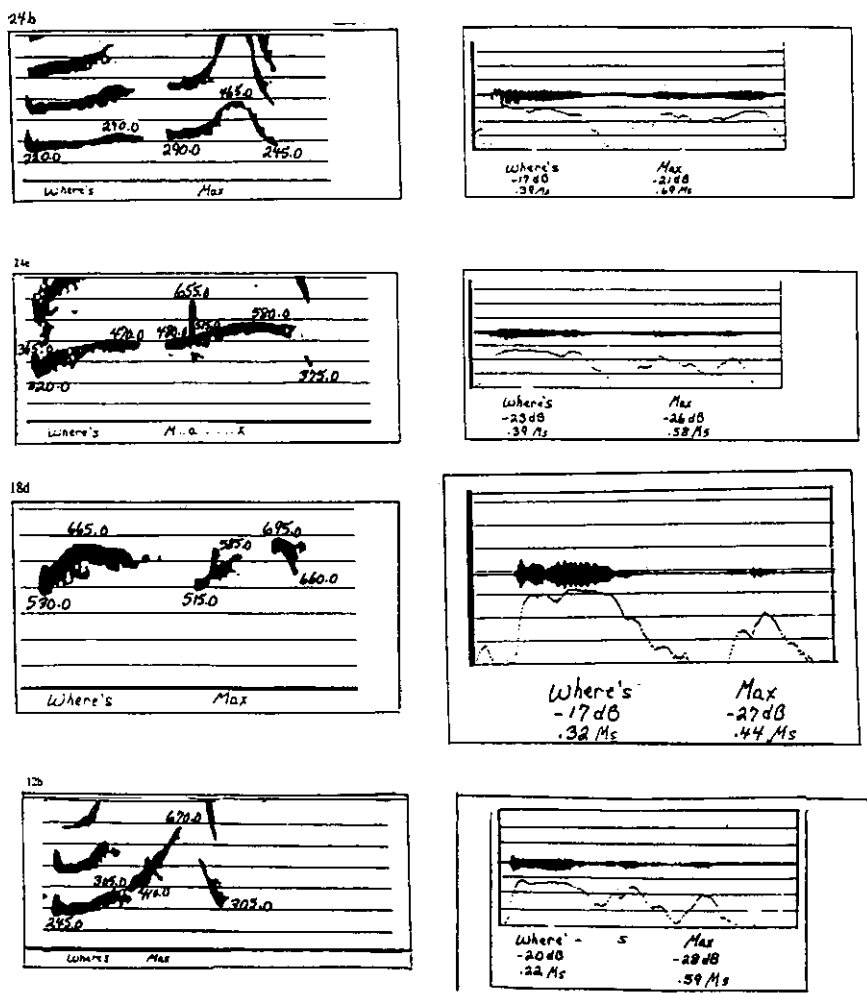
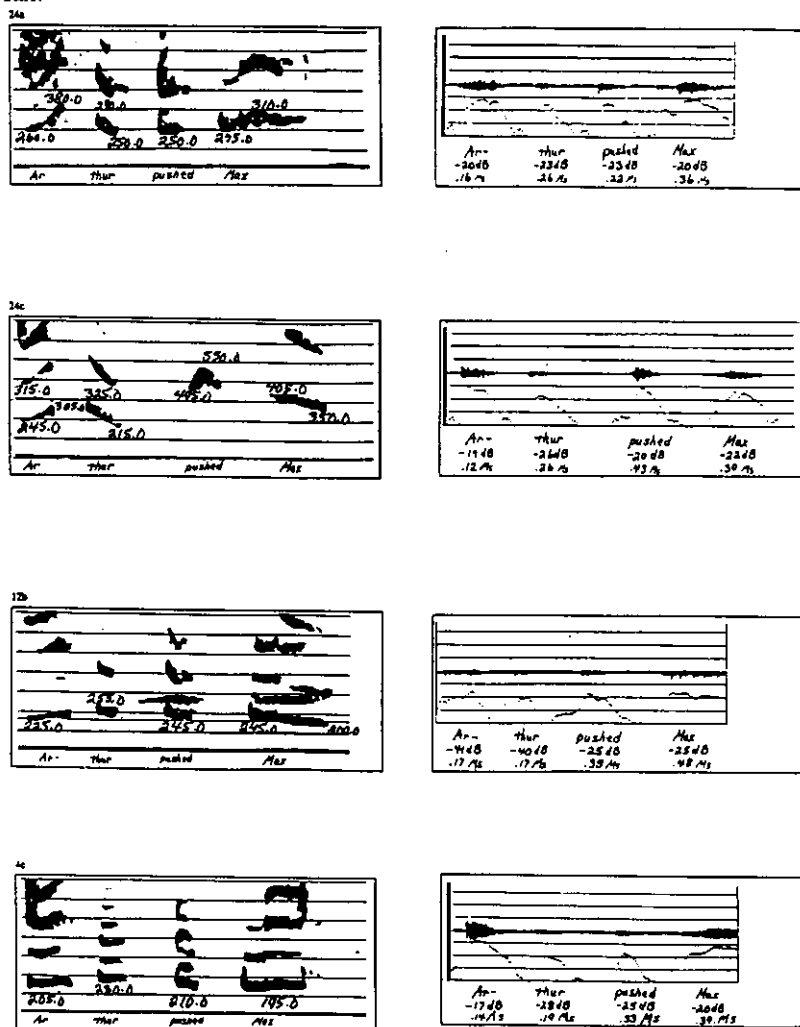


Figure 2. Mothers' perceived pitch and stress variations across children's ages while reading the story: *One Teddy Bear Is Enough!*; Sample: Arthur pushed Max.



The text: Farm animals

Sample: Roosters crow. Refer to Figure 3. Mother 24c (bl=230 Hz) started the text sample at a lower pitch (225 Hz) than the baseline habitual/conversational pitch and never exceeded 355 Hz which began the word "crow." Mother 24c stressed the syllable "roo" (-16dB) and "crow" (-20 dB) and spent time on the word "crow" (.70 Ms). The text sample was ended with the mother imitating a rooster's crow. Mother 24e (bl=190 Hz) began the sample at 215 Hz, not much above her baseline habitual/conversational pitch, and peaked on the syllable "roo" (375 Hz). The text sample ended at 20 Hz below her baseline habitual/conversational pitch. Mother 24e stressed "roo" (-16 dB) and spent more time on the remainder of the sample (.91 Ms total). The text sample was ended with the mother pointing at the roosters and saying, "Those are roosters."

Mother 12c (bl=200 Hz) started the word "roosters" at 235 Hz (below the baseline habitual/conversational pitch), raised the pitch to 375 Hz and ended at 175 Hz. The word "crow" was read similarly (219 Hz, to 290 Hz, and ended at 205 Hz). Mother 12c stressed the word "crow" (-20 dB). In addition, the "c" was isolated which allowed more time (.55 Ms) for the child to focus on the word. The text sample was ended by the mother pointing and saying, "Rooster, rooster." Mother 6c (bl=215 Hz) dropped below the baseline habitual/conversational pitch twice while reading the text sample on the syllables "sters" and "crow." (both time at 190 Hz). The syllables "roo" and "crow" were stressed (both -23 dB), and the "c" was isolated from the rest of the word. As the text sample was read, the mother pointed to the rooster and crowed. Mother 4e (bl=225 Hz) never raised the pitch above 295 Hz while reading this text sample. More stress was put on the syllable "roo" (-16 dB) and more time was spent on the syllables "sters" (.40 Ms) and "crow" (.59 Ms). Mother 4e also stressed the phoneme "c" in crow and made a crowing sound to demonstrate a rooster. The child mimicked the sound.

Sample: Baby goats. Refer to Figure 4. Mother 24b (bl=170 Hz) emphasized the syllable "by" in "baby" by sliding the pitch to 365 Hz to begin the syllable then quickly sliding back to 260 Hz. Mother 24b did not stress any syllable in this sample, but drew out the last word "goats" (.43 Ms). On the other hand, Mother 24e (bl=190 Hz) pointed to emphasize each syllable. To read the word "baby," she began at 295 Hz, over 100 Hz above her baseline habitual/conversational pitch. At one point,

Mother 24e raised the pitch to 415 Hz, then ended the sample at 200 Hz on the word "goats." The word "baby" was stressed (-19 dB for both syllables) and the word "goats" was elongated (.39 Ms).

Figure 3. Mothers' perceived pitch and stress variations across children's ages while reading the story: *Farm Animals*. Sample: Roosters Crow.

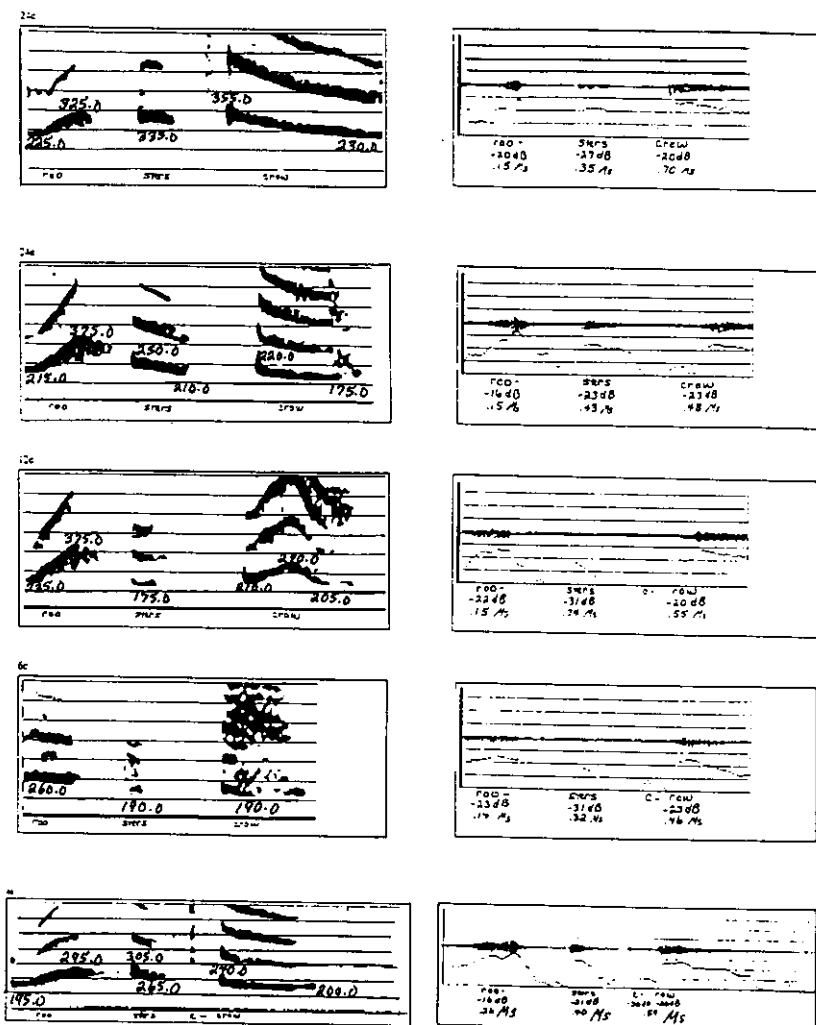
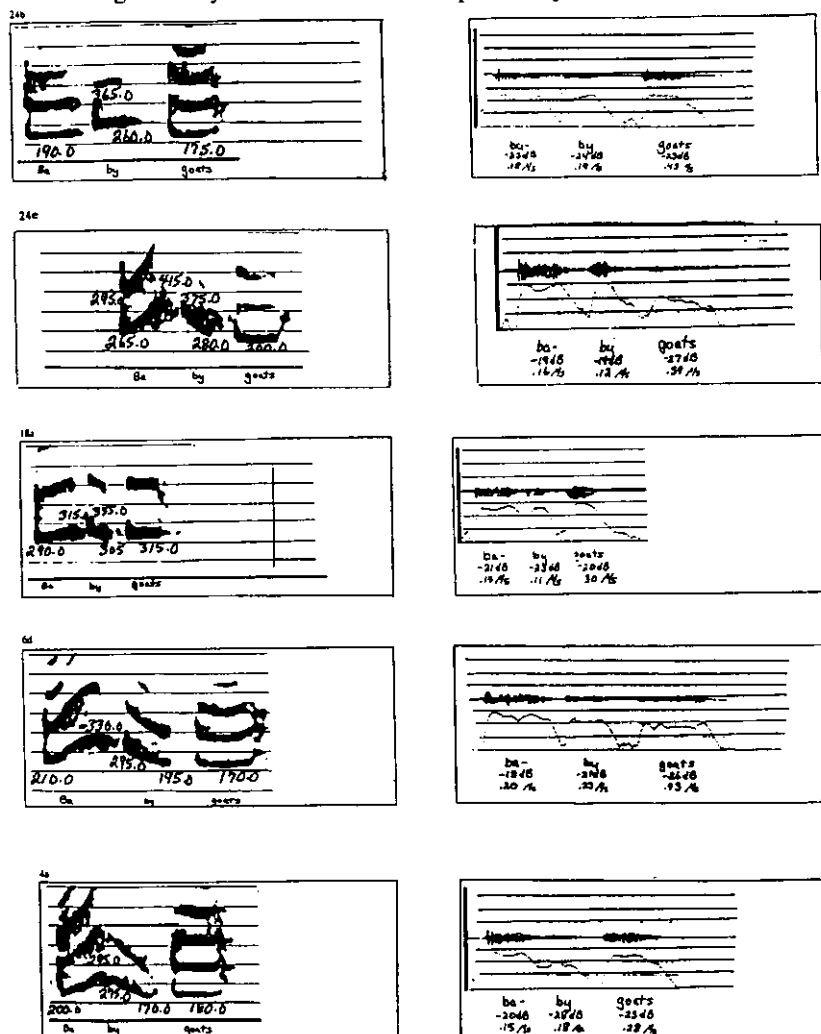


Figure 4. Mothers' perceived pitch and stress variations across children's ages while reading the story: *Farm Animals*. Sample: Baby Goats.



Mother 18a (bl=190 Hz) also emphasized the word "baby." At one point, the pitch was raised to 355 Hz. The word "goats" was ended at 315 Hz. Mother 18a gave each syllable of the text sample approximately the same amount of stress, but drew out the word "goats" (.30 Ms). Mother 6d (bl=200 Hz) raised the pitch to 330 Hz, but ended "goats" on 170 Hz, 30 Hz below the baseline habitual/conversational pitch. Two words were emphasized by stressing the syllables "ba" (-18 dB) and "by" (-21 dB), and drawing out the word "goats" (.43 Ms). Mother 4a (bl=175 Hz) used an elevated pitch on the syllable "ba" (295 Hz) and ended the text sample at 180 Hz, near the baseline habitual conversational pitch. The syllable "ba" (-20) was stressed, and more time was spent on the word "goats" (.28 Ms).

DISCUSSION

This study observed mothers' use of two prosodic features, pitch and stress, during two book reading events with their children. Analysis of common text samples across texts and children's age groups revealed patterns in how the mothers used pitch and stress to scaffold book language for their children.

First, patterns in mothers' pitch changes (Figure 1) showed that mothers did not vary pitch 47% of the time across text samples. This appeared most often with the sample "goat" from *Farm Animals* and "pushed" from *One Teddy bear is Enough!*. Mothers of 6-month-olds accounted for most of those times. Most of these mothers used the book reading event to play. Mother 6a stated, "I was playing with her more than anything. I mean she was grabbing for the book. She just wanted to interact. Playing with her made her happy." Besides pitch changes, mothers of the 6-month-olds also used more pointing, labeling, sounding, imitating, and brief discussions about specific concepts in the illustrations that engaged their children during book reading. Mother 6d explained, "Yes, I just decided to point. I pointed to the goats (in *Farm Animals*) and I said baaaaa and I kept pointing and she looked as I pointed. I think she was really interested when I did that." Playful behavior with infants during book reading was also observed by Van Kleeck, Alexander, Vigil, Templeton (1996), although the purpose for the behaviors was not identified as play. In this study, it appeared that the purpose of the book reading event for the mothers of these infants

was to guide their children's understanding of basic text concepts, and show their children the pleasure of the book reading experience. Using pitch variations was one of many ways that these mothers chose to do this.

A second pattern showed that mothers across children's age groups made the highest pitch changes on the word "Max" in *One Teddy bear is Enough!* The narrative involves complex issues such as learning to share and making new friends, issues that are a part of children's experiences. Mother 12a states, "That's just what the story says to me too. He's understanding that the story, well, that there are emotions in the story and important things to think about." These data support Altwerger's et al. (1985) findings in that the mothers in this study also used prosodic variations to personalize the book sharing event with their children. However, Altwerger et al. (1985) reported only one of the two mothers in their study using prosodic variations to scaffold text for the child. According to the findings in this report, all the mothers used pitch and stress at various degrees to engage their children while reading.

The mothers in this study across children's age groups and texts used a variety of strategies with pitch and stress variations to scaffold text for their children. Pointing, labeling and extended explanations about text concepts were noted as being used the most often in conjunction with prosodic variations. For example, to show how Arthur pushed Max out of the wagon in *One Teddy Bear is Enough!*, mothers tended to use the illustration to demonstrate just what Arthur was doing to Max. Mother 12c pointed to the picture and said with emotion "Look, they're out for a ride in a wagon and look, Arthur pushed Max out of the wagon!" Later, mother 12c states, "I started to tell the story with the picture." Similar strategies were also used with the expository text, *Farm Animals*. Mother 4d pointed to the rooster and say? (Cock-a-doodle-doo!)" The mother continued the text frame with pointing, questions with roosters, and demonstrations. Mother 4d explained later that it was important to show differences between the animals in the book. Pointing, stressing specific words, and explaining concepts in the text accomplished the task.

For some time, researchers have described pointing, labeling, and extended explanations beyond the printed text as important early book reading strategies to scaffold text for children (e.g., Ninio and Bruner, 1978; Altwerger et al., 1985; van Kleeck et al., 1996). Descriptions of

how prosodic features are also used to scaffold book language for children was limited to Altwerger et al. (1985) and Fernald and Mazzie (1991). Of these two studies, Altwerger et al. (1985) described how one mother used pitch and stress variations in conjunction with explanations during book reading. In this study, mothers were described using various strategies with prosody during book reading from infancy to the pre-school years. In addition, the mothers were asked to reflect on their reasons for using these strategies. The mothers appeared to have clear purposes for the strategies (which included pitch and stress) to scaffold text for their children.

Implications for research

This study has several limitations that lead to future research. To understand how mothers' use of pitch and stress may change across children's age groups, larger samples of mother/child pairs are needed. Observing mothers reading to children at home rather than the university setting may reveal more in-depth information about how prosodic features are used during early book reading. In addition, a longitudinal study where mothers are observed reading with their children over time may reveal how mothers change their uses of prosody as children mature. Repeated readings of the same text may show a difference in the way mothers across children's age groups use prosody to share books over time. The mother/child pairs in this study all came from one university setting. Reading to their children was a part of these mothers' routines. Observing other groups from different backgrounds, e.g., socio-economic groups, culture, should be explored. Many fathers read with their children. Comparing how fathers and mothers use prosody while reading with children should be observed. Furthermore, the data in this report are dependent upon the readings of two specific texts selected for this study. Readings of other texts may produce different results.

Implications for classroom teachers

Young children's early book language development is guided by caregivers' use of many strategies, which include, the prosodic features of the voice. Therefore, it is important for teachers to understand how their use of expressive language in conjunction with other book reading strategies guides children's understanding of the complexities of printed text (Holdaway, 1979; Dowhower, 1991; Schreiber, 1980; 1987; 1991;

Zutell and Rasinski, 1991). As the mothers in this study, teachers should reflect on several issues to prepare to read to students; a) their purposes for reading specific texts to their students, b) what the students know about the concepts in the texts, and c) how they plan and organize the readings of the texts to guide the children's understanding. Using expressive language to guide children's understanding of a story or important concepts should be a part of their planning and organization of book reading events.

CONCLUSION

This report showed how mothers across children's age groups used their prosodic features, pitch and stress, in conjunction with other reading strategies to scaffold book language for children. Pitch and stress variations aided the mothers as they focused their children's attention on important concepts and events in the books, and enhanced the meaning of the two different texts for the children. Thus, it is important to consider the prosodic features of the voice as tools to guide children's literacy development.

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Multimedia materials for language and literacy learning

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ABSTRACT

This article introduced educators to inexpensive, commercially-available CD-ROM software that may be incorporated into classroom activities for both normally developing and language learning disabled children. Computer disks read only memory (CD-ROM) combines speech, text, graphics, sound, video, animation, and special effects. Three types of multimedia CD-ROM products are discussed: a) virtual adventures; b) electronic storybooks; and c) desktop tools.

Explosive growth in the power and availability of multimedia offers enticing new opportunities for learning (McKenna, Reinking, Labbo, and Kieffer, 1999; Topping and McKenna, 1999). Multimedia technology combines speech, text, graphics, sound, video, animation, and special effects to convey meaning. Computer disk read only memory (CD-ROM) provides instant access to a diversity of multimedia materials that may be used to facilitate language and literacy learning (Horney and Anderson-Inman, 1999; MacArthur, 1999). For example, with the click of a computer mouse, children can travel the Oregon trail, publish books, meet undersea creatures, and take virtual tours through the animal kingdom.

The purpose of this article is to introduce educators to inexpensive, commercially-available CD-ROM software that may be incorporated into classroom activities for both normally developing and language learning disabled children. Three types of multimedia materials will be

discussed: a) virtual adventures; b) electronic storybooks; and c) desktop tools.

MULTIMEDIA MATERIALS

Virtual adventures

Virtual adventures engage children in meaningful language and literacy experiences. With the click of a computer mouse, students are guided through interactive, electronic field trips via visual images, animation, text, sound, and special effects (Algava, 1999). One program, known as Animals (Zoological Society of San Diego, 1992), provides a virtual tour of the San Diego Zoo with instant access to 15 minutes of video, and over 400 pictures. Users can listen to the animals, learn about their habitats, and watch them during feeding time, play time, and other engaging activities.

Virtual adventures stimulate interest and invite student involvement in a child-centered rather than a teacher-controlled environment (Ernst, 1997). Unlike contrived tasks, virtual adventures encourage users to observe, analyze, predict, and test hypotheses. The programs promote critical thinking skills as students construct knowledge in social interactive learning experiences (Moutray and Ennis, 1998).

Virtual adventures are especially applicable for classroom activities where groups of school-aged students collaborate (El-Hindi and Leu, 1998) as they gather clues, chase criminals, and solve crimes. Where in the World is Carmen San Diego, Jr., (Broderbund, 1997), select which weapons, food, and clothing are appropriate for a trip across the Oregon Trail, Oregon Trail: Third Edition, (The Learning Company, 1997), or investigate moons and planets in a jet propulsion laboratory Magic School Bus Explores the Solar System, (Microsoft Corp., 1996).

Virtual programs that foster exploration and inquiry (Harste and Leland, 1998) can be incorporated into a number of classroom problem-solving activities. For example, Barbie Fashion Designer (Mattel Media, 1997) teaches students to create, decorate, and assemble patterns into individual outfits that are later printed onto special fabrics.

Other programs offer innovative language lessons for the preschool population. For instance, Richard Scarry's *Busytown* (Simon and Schuster Interactive, 1993) automatically prompts preschoolers to follow step-by-step methods as they serve food in a deli, build a house, care

for a sick patient, and engage in other activities within 12 interactive environments. A similar product, *How Things Work in Busytown* (Simon and Schuster Interactive, 1993), teaches preschoolers how to build a tractor, bake bread, pave a road, and engage in other problem-solving tasks.

For primary to middle school age children, *Toy Story Animated Storybook* (Disney Interactive, 1996), brings toys to life as users engage in a variety of challenging activities. Children are invited to read along in the story, help characters escape danger, construct a puzzle, and participate in other interactive adventures. Another product, *Lego Island* (Mindscape, 1997), take primary and middle school age children on a virtual island tour via their own customized lego vehicles (e.g., dune buggies, water jets, skateboards). *Lego Island* engages students in a problem-solving adventure that gradually evolves into the chase and capture of Brickster, the island criminal.

Virtual adventure programs for older children are designed to integrate text, graphics, and other multimedia components into informative expository documents (Stearns, 1994). For example, *In The Company of Whales* (Discovery Channel, 1996) features videos as well as hundreds of photos and supporting articles. Users listen to a panel of four experts, see rare whales, and listen to whale songs within a compendium of text, video, audio, and other multimedia messages. Another program for older children, *3D Dinosaur Adventure* (Knowledge, Adventure, 1996) combines fully narrated text, a talking storybook, movies, and still images that are used to examine 150 different types of dinosaurs and reptiles. Virtual adventures offer visual images, animations, sound and special effects to children with language and learning disorders who may find multisensory learning experiences more stimulating than traditional textbooks.

Advantages and disadvantages

Virtual adventures immerse students and teachers in a variety of simulated language experiences. Whereas most virtual adventures products are efficient for teaching and easy to use, educators may find it useful to consult the users' manual occasionally to clarify ambiguous on-screen instructions (e.g., *Magic School Bus Explores the Solar System*, *Oregon Trail: Third Edition*). In addition, several products (*The Magic School Bus Explores the Solar System*, *Lego Island*) require extra read

only memory (RAM) to ensure smooth screen transitions and fast-moving play.

ELECTRONIC STORYBOOKS

Electronic storybooks combine lively animations, music, speech, realistic sounds, and special effects with text (Glasgow, 1997). Short clauses of highlighted words are displayed on the computer screen and simultaneously spoken by a narrator providing a visual focus for at risk students. Users control the pace at which the story pages are turned as they attend to word-by-word or line-by-line reading cues (Talley, Lancy, and Lee, 1998). In addition, animation and special effects may improve the quality of the story model by providing multi-sensory cues to children with language and literacy disorders who might otherwise ignore important contextual information (McKenna and Reinking, 1997). For example, *Living Books* (Broderbund, 1994) are electronic versions of either narrative or expository texts that combine high quality animations and graphics with speech, sound, music, and special effects (Matthew, 1994).

One of the *Living Books*, *The New Kid on the Block* (Broderbund, 1993), brings 18 poems to life via graphics and animation. The narrator reads the words aloud while the animations convey meaning. For example, a click of the computer mouse on the written phrase "fled screaming down the street," prompts the story character to run screaming down the road amid the sights and sounds of traffic. Teachers can use these types of point-and-click activities to build vocabulary and enhance word meaning within the context of interactive, animated stories (Horney and Anderson-Inman, 1999).

Another *Living Book* illustrates the story of the Tortoise and the Hare (Broderbund, 1994) in both Spanish and English. Users either read the story along with the narrator or "play inside the story." For the play option, students search for a variety of animated surprises that are embedded within each of 12 story pages. On one page, a click of the computer mouse prompts an animal to sing, "I'm a beaver and I rap and I wear a baseball cap." On an adjacent page, a click on a rooftop causes the chimney to wake up and say, "Good morning!"

Because *Living Books* are packaged with both the traditional hard copy and the electronic CD-ROM, teachers may decide to incorporate

both electronic and traditional materials into classroom activities. For instance, children can read the animated story along with the narrator during repeated reading sessions and then use the pictures in the hard copy to recall story events. According to McNinch, Shaffer, Campbell, and Rakes (1998), children improve in reading by reading. Electronic storybooks provide students with repeated reading experiences that combine story narration and word pronunciation in the context of realistic animations and special effects (McKenna and Reinking, 1997).

Another electronic series, Discis Books, are multimedia versions of children's narrative (e.g., Robert Munsch's *Mud Puddle*) and expository texts (e.g., National Geographic's *Edition of Birds and How They Grow*) (Knowledge Research, Inc., 1993). Discis Books are equipped with a variety of built-in features that permit teachers to monitor student progress, change vocabulary, and alter reading rate (Matthew, 1994). For instance, educators can incorporate spelling words into electronic stories and adjust the reading rate to meet individual student needs.

Paul, Hernandez, Taylor, and Johnson (1996) suggest that storytelling ability involves higher level linguistic skills that integrate events, vocabulary, and cause-effect relationships within culture-specific story structure. Davidson and Associates have created a variety of electronic folktales that highlight cultural differences. For school age children, *Baba Yaga and the Magic Geese* (Russian), *Imo and the King*, (African), and *The Little Samurai* (Japanese) (Davidson and Associates, Inc., 1995) allow teachers to present different types of cultural folktales into classroom activities. Each folktale reflects the culture and the country from which it came via animation, graphics, music, and special effects.

Another Davidson product, *Chicka Chicka Boom Boom*, (Davidson and Associates Inc., 1995) adds an exciting dimension to multimedia digitized video. *Chicka Chicka Boom Boom* is the electronic version of a rhyming alphabet book of the same name for preschoolers. Videoclips of real-life children appear on the screen to guide users through a variety of language and literacy activities. Options include song and story narration (by Ray Charles and others), click-and-play musical instruments, letter-sound sequencing games, and other literacy experiences. As an added feature, users are invited to record their own voices within the story format. The voice recorder integrates children's speech into realistic storytelling sessions. Because a hard copy of *Chicka Chicka Boom*

Boom is packaged with the electronic book, both story versions may be incorporated into a variety of language and literacy lessons.

Advantages and disadvantages

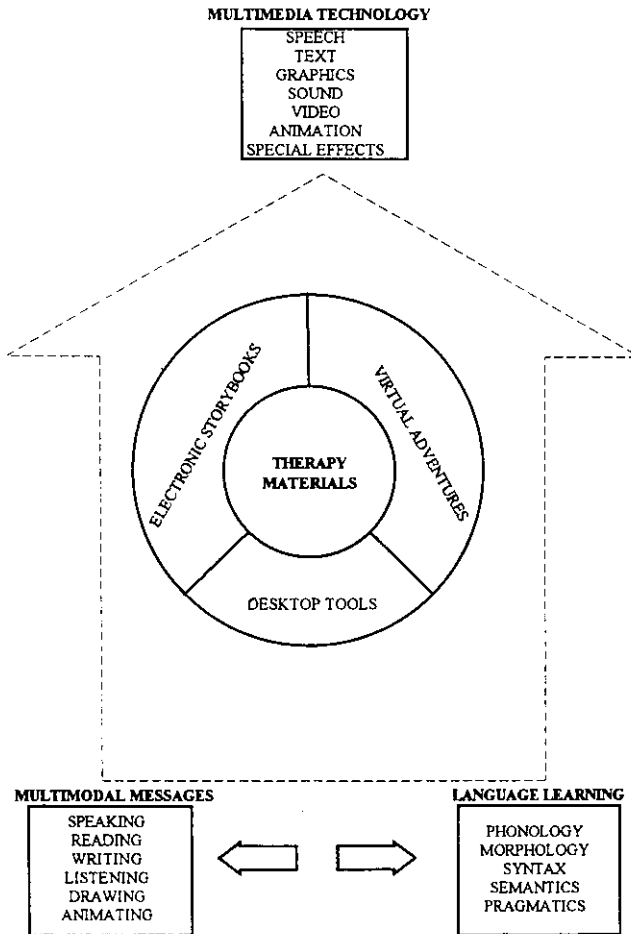
The advantage of electronic storybooks is that they provide students with multi-sensory learning opportunities. The primary disadvantage is that they are limited by the manufacturer's design. While user-friendly Living Books feature high-end graphics and animations, they are not equipped with built-in options that permit users to alter reading rate and monitor student progress. On the other hand, Discis Books combine flexible options with low-end graphics and no animation. Finally, although their graphics and animations do not approach the quality of the Living Books, Davidson products are simple to use, and applicable to a variety of student populations.

DESKTOP TOOLS

Desktop tools integrate paint, graphics, animation and other multimedia ingredients into a wide variety of creativity tools. Students can use desktop tools to incorporate a variety of multi-modal messages (e.g., speaking, reading, writing, drawing, animating) into a whole language approach to learning. Multimedia technology delivers a variety of multi-modal messages which may be used to convey meaning (Lapp, Flood, and Fisher, 1999). Researchers suggest that when children are naturally involved in language, and when they are building, creating, exploring, and they can see a purpose in their work, the learning will occur spontaneously (Goodman, 1986; Smith, 1986).

Figure 1 illustrates the mixture of speech, text, graphics, sound, video, animation, and special effects (multimedia) that provides students with new modes of self-expression (Grone, 1998; Topping and McKenna, 1999). For example, using desktop tools, children with language and learning disorders may use computer graphics rather than words to draw detailed diagrams that visually communicate information (Weaver, 1993). Later, the visual diagrams may be used to create verbal descriptions of the message.

Figure 1. Language and literacy learning in a multimedia environment.



According to Smith (1986), the ultimate curriculum goal is to create an environment filled with language use that gives students a need to convey information to a host of audiences for a variety of purposes. Desktop tools stimulate new learning opportunities and permit children to create messages that are both personally meaningful and socially appropriate (Moutray and Ennis, 1998). Desktop tools offer a variety of

features including computerized drawing tools, paint brushes, image libraries, animations, music, speech, text, and special effects. Multimedia messages take the form of stories, poems Kid Pix Studio Deluxe (Broderbund, 1994), essays, journals The Amazing Writing Adventure (Broderbund, 1995), letters, Internet messages Kidworks Deluxe (Davidson Associates, Inc., 1995) signs, greeting cards, posters, banners Print Shop Deluxe (Broderbund, 1997), news stories, plays, and animated movies Magic Theatre and Haunted House (Instinct Corp., 1996).

Other types of desktop programs inspire children to use multiple symbol systems (Wolf, 1998) as they engage in personally meaningful reading and writing activities (Bouas, Thompson, and Farlow, 1998). One product, The Amazing Writing Adventure, allows students to write and publish their own books, journals, poems, and other multimedia messages. For instance, the Bright Ideas option provides young writers with quotations, jokes, fun facts, and ideas for topics. Other options include: a) a rebus picture tool that allows users to replace text with pictured symbols; b) a spin feature that includes point-and-click changeable words and phrases; c) a secret code tool that interchanges text with graphic codes; d) a variety of stimulating story starters; and, e) several pre-formatted page templates designed for stories, essays, poems, and other genre. In particular, the rebus picture tool may be used as a "keep-going" strategy (Harste, Woodward, and Burke, 1984) for children with poor phonics skills who prefer to compose their ideas holistically with the aid of graphic illustrations.

Another very useful desktop tool is the text-to-speech function available in Kid Pix Studio Deluxe. Students listen as their multimedia messages are read aloud via built-in character voices, or they record their own narration. As a result, students can share their ideas in talk and writing (Nistler, 1998) via voice-recorded plays, stories, poems, and other creative products that can be integrated into a variety of language and literacy experiences.

The Internet interface in Kidworks Deluxe permits children to transmit multimedia messages to conversational partners in other parts of the world. For example, student "speakers" in one location have the opportunity to send multimedia messages to "listeners" in other locations via the Internet. Internet conversations promote pragmatic language skills (Pershey, 1997) as students ask and answer questions, send and

receive messages, and exchange greeting and closing remarks during naturalistic language activities. As a result, students engage in language and literacy learning in the context of a worldwide community of readers and writers (McKenna, Reinking, Labbo, and Kieffer, 1999). In particular, computer networking as an instructional medium may benefit struggling readers and writers including children with language and learning disabilities (Fey, 1997).

On another front, KidCad (Davidson and Associates, Inc., 1994) provides school age children with an opportunity to create innovative three-dimensional artistic designs. According to Heymsfeld (1997), artistic creations are cognitive activities that are vital to academic and personal development. Students can use KidCad's electronic building blocks to create houses, castles, and other three-dimensional buildings. Zoom-in features and multiple camera angles permit children to rotate objects, characters, and buildings. A variety of user-friendly options such as animation, sound effects, and music are provided. In addition, an image library consisting of furniture, animals, and other characters may be added to self-designed scenes. Children who have difficulty processing spatial concepts may find it helpful to create and move three dimensional objects in space and time. Moreover, self-constructed scenes can be saved and retrieved for future learning sessions.

Advantages and disadvantages

Desktop tools inspire students to write, illustrate, and publish a variety of multimedia products. The major disadvantage is that the procedures for creating desktop products are generally more complex and time-consuming than those of other multimedia materials. Educators may be wise to begin with a user-friendly program (e.g., Kid Pix Studio Deluxe, KidCad) that meets the needs of students across a wide variety of skills and age levels.

SUMMARY

According to Harste, Woodward, and Burke (1984), the real curriculum is what happens in the mind of the language user. Multimedia materials permit students to process information in whatever modes they choose. Computerized speech, text, graphics, sound, video, animation, and special effects are combined to convey meaning. Regardless of the

tool, the ultimate goal is the expansion and extension of the communicative potential.

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Appendix

Computer Programs Cited

- Amazing writing adventure [Computer software]. (1995). Novato CA: Broderbund.
- Animals [Computer software]. (1992). San Diego CA: Zoological Society of San Diego.
- Baba Yaga and the magic geese [Computer software]. (1995). Torrance CA: Davidson & Associates.
- Barbie cool looks fashion designer [Computer software]. (1997). El Segundo CA: Mattel Media.

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