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Margaret Lally Queenan
University of Bridgeport, mqueenan@bridgeport.edu

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For the Good of the Multicultural Society in One Urban Third Grade

Margaret Lally Queenan

University of Bridgeport

Margaret Lally Queenan is the associate dean and an assistant professor in the School of Education at University of Bridgeport in Bridgeport, Connecticut. The research reported here was supported by a small research grant from the University of Bridgeport School of Education.

Correspondence regarding the research should be addressed to Margaret Lally Queenan, 106 Carlson Hall, University of Bridgeport, Bridgeport, CT 06604. Contact: mqueenan@bridgeport.edu.

Abstract

This study used ethnographic participant observation methods to analyze weekly teaching in five third grade urban classrooms. The theoretical background included the National Reading Panel and the RAND Reading Study Group's advocacy of comprehension strategies and concern that strategies are taught for their own sake rather than for learning content. Data included student artifacts (notes, letters, and interviews) and researcher artifacts (lesson plans, teaching charts, and field notes. Analysis included constant comparison of data and coding until saturation. Results showed that students learned content and strategies but upset teachers with noise during discussion, alleviated through structured procedures.

The purpose of this participant observation study (Spradley, 1979) was to understand the "lived experience" (Kamberelis and Dimitriadis, 2005, p. 33) of urban third grade students in Striving Elementary School (a pseudonym) as students applied reading comprehension strategies (National Reading Panel [NRP], 2000; Pressley, 2001, 2005; RAND Reading Study Group, 2002) to science texts (Bryce, 2011; Guthrie, Van Meter, Hancock, McCann, Anderson, & Alao, 1998). Since I teach graduate students how to teach reading, I strove to live up to teaching expectations for struggling readers synthesized by the RAND Reading Study Group (2002):

> An important instructional strategy for these learners consists of making instruction very explicit. Explicit instruction provides a clear explanation of the criterion task, encourages students to pay attention, activates prior knowledge, breaks the task into small steps, provides sufficient practice at every step, and incorporates teacher feedback. It is particularly important for the teacher to model the comprehension strategies being taught. Careful and slow fading of the scaffolding is important. (p. 33)

In particular, the study attempted to determine whether students would learn both the content of science and reading comprehension strategies. Those strategies are variously named. Some researchers call for students to visualize, infer, self-monitor, generate questions, and synthesize (Pressley, 2001; Brown, 2008; Keene and Zimmermann, 2007). Others name "concept mapping, question generating, question answering, summarizing, and story mapping" (RAND, p. 32). Still others emphasize other reading comprehension strategies. For example, Van

Keer & Verhaeghe (2005) studied second and fifth graders' ability to comprehend in peer tutoring groups when taught to connect prior knowledge to text, predict, distinguish main from side issues, monitor understanding of words, trace ideas expressed in difficult passages, and adjust reading behavior to types of text (p. 302). While descriptions differ, recent work on emphasizes students' use of reading comprehension strategies deliberately and in tandem (Brown, 2008; Keene & Zimmerman, 2007; Lanning, 2009). This study sought to discover if third graders could do just that—and learn science at the same time, a subject too often left in the margins (Queenan, 2012). Throughout this research project I embraced the words of Duke and Martin (2011): "The ultimate purpose of literacy research is to deepen understanding of and thus improve literacy education" (p. 11). I sought, therefore, to conduct literacy research for the good of the third grade multicultural classrooms of one Connecticut urban school.

Theoretical Framework

Some think that poverty contributes to the achievement gap (Hatt, 2007; Levin, 2007; Wamba, 2010). However, the 2007 NAEP reading test for fourth graders showed that the difference in scores between Black and White students who received free and reduced lunch was not statistically significant (Vannemann, Hamilton, Anderson, & Rahman, 2009). With the right interventions, minority children of poverty achieve. For example, the interventions implemented by Lai, McNaughton, Amituanai-Toloa, Turner, and Hsiao (2009) eliminated New Zealand's achievement gap. To accomplish that feat, the researchers increased students' vocabulary, built up students' knowledge base, and convinced students of the relevance of their skills. Rather than have students learn reading comprehension strategies divorced from context, Lai et al. (2009) used comprehension strategies to promote students' discussion of meaning. A particularly

effective intervention improved the "density of instruction" (p. 52); that is, teachers stopped spending time on instruction divorced from reading and ceased dominating the conversation through initiating a question, evaluating the answer, then responding (Cazden, 2001).

Unfortunately, "improving the density of instruction" (Lai, et. al. 2009, p. 5) is not the intervention used in most schools. In fact, Dewitz, Jones, and Leahy (2009) found that core reading programs present such a large number of skills and strategies that all "get superficial treatment" (p. 120). In contrast, the National Reading Panel's strategies of comprehension monitoring, cooperative learning, graphic and semantic organizers, story structure, question answering, question generation, summarization, and multiple-strategy teaching (National Reading Panel, 2000, p. 4-6) are "parsimonious" (Dewitz et al., p. 119). This research project endeavored to be parsimonious, teaching comprehension monitoring, question generation, and synthesizing, three of the National Reading Panel's recommended strategies, plus visualizing and inferring because others in the field found them beneficial (Keene & Zimmermann, 2007; National Reading Panel, 2000; Pressley, 2006).

According to the Connecticut State Department of Education (2011), the students in Striving Elementary School had high "Indicators of Educational Need": Of the 802 students in this K-5 school, 79.9 percent received free and reduced lunch; 24.3 percent were not fluent in English; 11.5 percent were disabled; and only 37.3 percent attended preschool. Therefore, the theoretical framework relied on Cleveland's (2011) premise that boys with high needs can be helped through the following means: building their literacy skills (p. 212); engaging them in their learning (p. 175); adjusting the environment for their physical needs (pp. 158-166); connecting the successful practices of collaborating and communicating processes to "real world tools" (p.

133); providing clear directions, feedback, and reinforcement (p. 100); and creating classroom policies that expect and facilitate excellence (p. 85). For the same reason, the theoretical framework took into account Guthrie, Coddington, and Wigfield's (2009) finding that low achieving students "had low self-efficacy (I am not a good reader) and high perceived difficulty (I have a lot of problems reading words)" but that African American students succeeded when they had a "general belief in their capacity" and recognized their "specific strengths" (p. 344). Ives (2011) found that struggling students' literate capabilities hid in plain sight because the students did not want to be observed reading for pleasure, playing with language, or attempting to be good students (p. 256). The theoretical framework, therefore, encompassed the hypothesis that literacies of struggling students are often "hiding in plain sight." (p. 253). Every state, especially Connecticut with the highest achievement gap in the United States (Connecticut Commission on Educational Achievement, n.d.), wants to find interventions that will eliminate that gap. I hoped that the intervention I proposed, to incorporate the literacies students brought with them and the reading comprehension strategies that their teachers and I taught, would prepare students to understand content at grade level.

Methodology

For the past five years I have spent a full day once a week for the entire school year as a teaching researcher in the five fourth grade classrooms of Striving Elementary School in a high poverty Connecticut school district. Midway through the past school year the principal requested that I model the same comprehension strategies in the third grade classrooms. Third grade teachers devoted two hours to literacy, including language arts, reading, spelling, writing, open ended questions, and reading comprehension, with an additional half hour for intervention.

During intervention, teachers worked with small groups and focused on sequencing or decoding. The Special Education teacher sometimes worked in the classroom and sometimes took five students into her office to teach curriculum skills, particularly phonics [lunchtime conversation, 1/24/11]. The third grade teachers read professional texts; e.g. Boyles, 2011, and displayed the comprehension posters that one teacher downloaded and copied. The administrators thought that having me teach comprehension strategies would also be beneficial. The teachers volunteered to allow me into their classrooms to teach as I researched students' progress.

Grade 3 in Striving Elementary School had five classrooms with veteran teachers who had worked together as a team for seven years. They shared their students with me once a week for a 45 minute Guided Release of Responsibility lesson (Pearson & Gallagher, 1983). First, I explained a comprehension strategy; then I modeled the strategy as I thought aloud; after that I encouraged groups to practice the strategy collaboratively; then I provided guided practice for some who needed it and independent practice for others who were ready to work on their own (Lanning, 2009, pp. 19-20). Because Striving Elementary School used *Trophies* (Harcourt, n.d.), a scripted reading program, and since the maximum amount of time teachers had available to spend on science instruction was 45-60 minutes every other week, including the reading of *Science Weekly* magazine; and since teachers judged that students had limited background knowledge of general topics such as skiing, jazz music, and aircraft carriers [lunchtime conversation, 2/7/11], the teachers approved of my teaching reading comprehension strategies through science trade books. Teachers thought that students were weaker in nonfiction than in fiction because they were not exposed to nonfiction and did not have the background knowledge to make sense of it. Since third grade students like to learn about animals and because one of the state science standards for Grade 3 expects students to demonstrate understanding that

"organisms can survive and reproduce only in environments that meet their basic needs" (Connecticut State Department of Education, 2009, p. 18), the teachers and I chose the survival stories of tigers and cheetahs as the science content for students to learn. My university provided a small grant to purchase trade books to motivate interest (Guthrie, Coddington, & Wigfield, 2009). The Internet provided materials when the small grant ran out because, as Baumann & Ivey (1997) discovered, students learn content best when they are absorbed in reading authentic texts. According to the Developmental Reading Assessment, or DRA, (Beaver & Carter, 2007) administered by teachers in January 2011, the majority of students read between DRA Level 24, proficient for winter of second grade, and DRA Level 34, proficient for winter of third grade (Connecticut State Department of Education, 2010). I selected texts at those levels.

Pressley (2006) described "transactional comprehension strategies instruction" that included a) direct explanation and modeling of a strategy, b) guided practice monitored by the teacher, and c) cueing of strategy use, accompanied by a "dynamic direct give and take" (p. 309) incorporating construction of meaning by the reader (Rosenblatt, 1978). This was the mental model I followed as I demonstrated comprehension strategies, students applied them, and small groups discussed what they learned, usually with my guidance and often with the active help of the classroom teacher. I strove to be a "temporary figure scaffolding students' understanding" as they moved from "novice to expert status" (Maniates and Mahiri, 2011, p. 12) in understanding texts. Like the teacher Maniates & Mahiri (2011) studied, I modeled comprehension strategies as I read aloud from a touchstone text (Calkins, 2010), *Swift as the wind: The cheetah* (Esbensen, 1996). Because students understood both the text and the strategy, they were able to apply the selected strategy to their own texts and understand when I cued them to use a strategy they had learned. My research question began as an open-ended and general one: "Does a focus on

reading comprehension strategies promote or prevent third graders' understanding of content?" and progressed to a specific question motivated by classroom interactions (Drew, Hardman, & Hosp, 2008): "Why do some children take notes and some children turn in blank pages?"

Data

Data consisted of artifacts produced by the students and me. After I modeled on chart paper, students focused their notes on science standards: 1) animal behaviors that enabled them to "get food, water, and sunlight; find mates; and be protected in specific land…habitats"; 2) "how behaviors…give species advantages for surviving unfavorable environmental conditions"; and 3) "examples of ways animals benefit from camouflage" (Connecticut State Department of Education, 2009, p. 18). My artifacts included lesson plans (Appendix A), sometimes shared with the third grade teachers, and anchor charts (Harvey & Goudvis, 2007) used to model my application of a reading comprehension strategy to a text about tigers or cheetahs. For example, when I modeled self-questioning ("I wonder why cheetahs kill during the day") and inferring ("I guess it's easier because cheetahs can see the prey better") then asked, "I wonder what variety of animals the cheetah eats," studens inferred based on their knowledge of animals, "I guess they eat rabbits, hedgehogs, goats, deer." Students later read to confirm their inference and learned that cheetahs "kill large prey (buffalo calves)" [anchor chart, 4/1].

Data included interviews with students and field notes reflecting on lunchtime conversations with the teachers as we met in one of their classrooms. Teachers talked about their support for each other and their concern for next year when one would be transferred to a younger grade. They discussed a new literacy program to be implemented next year when students would be grouped by ability after several years of being grouped heterogeneously, and

how students would fare. Teachers were willing participants and answered all of my lunchtime questions. A school-researcher partnership is important for "…some of the most compelling research arises from collaborations between researchers and teachers, when teachers and researchers share insights and burning questions that they have about practice and perhaps tinker together toward answers" (Duke and Martin, 2011, p. 11).

Analysis

Analysis followed the tenets of qualitative research (Kamberelis & Dimitriadis, 2005; Strauss & Corbin, 1998) and consisted of reflecting in field notes by making a thick description of events (Geertz, 1973); using codes to compare data and to insure that data was collected for a category until it yielded no further insights (Strauss & Corbin, 1998); and attempting to understand from others' points of view (Kamberlis & Dimitriadis, 2005, p. 33), in this case the students' and teachers' perspectives. I examined students' texts for "(a) memory for text, as indicated by amount of text information recalled; (b) inference generation, as indicated by the number of valid inferences included in recall; and (c) level of representation coherence achieved, as indicated by the kinds of inferences generated" (Diakidoy, Mouskounti, & Ioannides, 2011, p. 25). I entered codes into NVivo (2010) software which searched data electronically for further instances of the coded element. I also used a componential analysis of properties of data (Spradley, 1979) to search for contrasts and similarities among the coded data.

To analyze lunchtime conversations recorded in field notes I followed the pattern of coding and comparing similarities and uniqueness among incidents described by the five teachers (Strauss & Corbin, 1998), and sometimes the special education, art, and reading teachers, as well

as two long-term substitutes, both of whom had graduated from the university where I teach and were comfortable in sharing insights.

Results

The third grade students of Striving Elementary School developed background knowledge about cheetahs and tigers through reading and listening to texts and were thus able to make inferences about content (McKeown, Beck, and Blake, 2009). Students also applied comprehension strategies such as visualizing and enjoyed drawing the pictures they saw as they read (Keene and Zimmermann, 2007). Students learned how to monitor their comprehension, as well. First, I modeled how I asked a question and guessed the answer then read to confirm or disaffirm my deduction. Students joined in the process: "How fast does the cheetah have to go to break its leg? Guess: 80 miles per hour because they can go 70." The students helped me make a list of what to do when we find out we are confused when reading:

When I monitor my comprehension, I…

1. Notice when I'm stuck.
2. Write a question.
3. Make a guess about the answer.

As students developed background knowledge about and interest in cheetahs, they generated their own questions. For example, one anchor chart listed facts the third graders had learned:

CHEETAH FACTS:

- Fastest cats (75 mph)
- Carnivores
- Big, sharp canine teeth/big claws
- Make marks on trees

That background knowledge prompted further questions and allowed students to infer answers to their questions before reading for confirmation:

Question	Inference
Is a cheetah like a tiger?	No: The tiger is stronger; the cheetah is faster. Both are cats
How do cheetahs run so fast?	They have big paws/they jump/they are good runners.
What do cheetahs eat?	Meat
Why do cheetahs make scratch marks on trees?	To protect themselves and their babies from predators
How many babies do they have?	120? 2-12?

Students learned that when reading nonfiction, the answers to their questions were not always given in the text. However, with their teachers' and my prompting, students decided that they had learned enough to group their new understandings under the Connecticut science standards labels of "habitat" and "survival":

Habitat	Survival
• No names for girl and boy cheetahs, just "cheetah" • Young females share the same range as their mother. • Habitat=322 miles (females)	• Female cheetahs live alone except when they take care of babies. • Captured cheetahs live longer than cheetahs in the wild.

Each week students created their own charts in imitation of the ones we created together. For example, Tina wondered (Students' names are pseudonyms): "Why do cats chase animals by themselves? Don't they make a sign so other cheetahs can help?" and answered: "I guess that they could make a sign because they do make signs on the tree to tell that a prey is coming so other cheetahs can see it on the tree when they come by hunting so they can smell and follow the scent." On another day Tina asked, "Why do cheetahs have golden eyes?" and guessed, "Guess it makes them hard to see on tall yellow grass." As happens in every classroom, students learned what I taught (McKeown, et. al., 2009). Tina incorporated her learning into a letter:

Dear Second Graders, Cheetahs run up to 75 miles per hour. They can run faster than a car. Cheetahs can eat an animal in one day or eat half and get some leaves and pile them up. You can often see cheetahs in Africa. Cheetahs mostly eat meat, only meat. Cheetahs have big paws so they can run fast. Also, cheetahs are different colors but only if they are old. Cheetahs have good eye sight. Cheetahs are swifter than tigers. Cheetahs also have 2,000 spots.

Although students like Tina were conscientious in completing their notes, Orlando skipped three sections of a four-square chart:

List what is important: -Cheetahs can run about the same speed as a race car.	**Write what you visualize:**
Ask a question:	**Infer (Guess) the answer**:

Even though Orlando left his chart almost blank, he had enough information in his sparse notes about cheetahs and in his head to write a “Did you know” letter to second graders. He left out

question marks, perhaps because his “Did you know” sentence stems were a way to include facts while involving his second grade reader in the facts he shared:

To Second Graders:

Did you know that cheetahs are swift at 75 mph. Did you know that female cheetahs stay solitary when the coalition goes to hunt for their food. Did you know that the most amount of babies a cheetah can have is six baby cubs. Did you know that some cheetahs aren’t wild with people because they are trained by doctors. Did you know that cheetahs don’t have different spots because they are all the same. Did you know that captured cheetahs live longer than cheetahs in the wild. Did you know that female cheetahs live solitary until they have to take care of their babies. Did you know that when female cheetahs are born they go with their brothers 322 feet away.

A problem developed in facilitating small group discussions. Since silence was often the working mode for seat work, students were not yet practiced enough to hold productive, yet quiet, conversations. To avoid requests for “Sshh!” from teachers and, surprisingly, from students, I announced that the first twenty minutes after my ten minute minilesson (Calkins, 2001) would be for silent reading and taking notes; but the next fifteen minutes would be “noisy” when students were expected to make the wonderful noise of learning where they shared ideas about the content they had read and the reading comprehension strategies they had used. Knowing what to expect helped both teachers and students understand that the noise of conversation focused on their reading helped learning occur (Almasi, 2003).

Another problem developed when some students took too-few notes. Teachers thought that disinterest or lack of motivation caused students' non-participation. Since Calkins (2001) insists that choice is the leading motivator of engagement, teachers agreed that choice of texts, partners, and response might make a difference. For example, students could choose whether to respond to all their notes on cheetahs by writing to second graders, writing a poem, or writing an informational book like the ones they had been reading. In some cases, teachers preferred to assign partners because students would not stay on task if they worked with partners of their choice. However, choice of book and choice of response remained as students discussed their notes about cheetahs in their seating groups. Ann, Dolores, Sam, and Michelle had the following discussion when I interviewed them about their application of comprehension strategies:

Researcher: How did you ago about reading?

Michelle: I opened the book and read the first page and went to the second.

Sam: I looked at the pictures to see if I had any ideas.

Researcher: Did you?

Sam: Not really.

Dolores: I looked at pictures and saw a cheetah chasing a gazelle. I saw it fling its neck. I thought it was sucking blood.

Ann: I just looked at the pictures. I looked at the table of contents to see what would be interesting to read. I went to that page and started reading.

Researcher: Did you make up questions as you read?

Ann: I had a few ideas: How did cheetahs' organs get bigger as they run? What do they eat? How far do they jump? How good is their hearing? How good is their eyesight? How do they give birth to another? And also I can make up a picture in my mind.

Researcher: What have you learned about cheetahs?

Sam: Cheetahs don't purr. They make a bird sound.

Michelle: I didn't know that cheetahs are going extinct. That's sad because it is my favorite animal.

Ann: I knew everything. I had a bunch of cheetah books. I liked reading about them.

Perhaps because Ann "knew everything" from having read about cheetahs, she was able to ask six questions about them in rapid succession during her turn and to explain that she was able to visualize cheetahs, as well. McKeown, Beck, and Blake (2009) contrasted direct teaching of strategies such as "summarizing, making inferences, and generating questions" (p. 218) with a content approach where students built "a representation of ideas through discussion" (p. 218) and a control group that answered the questions in the Basal reading program. The authors discovered that students who read expository text and focused on content recalled more content than students who read expository text and focused on strategies (p. 243). The authors hypothesized that discussion in a group talking about strategies "may split focus between talking about strategies and talking about content" (p. 243). In contrast, students in this study learned content and strategies, as indicated by their ability to generate questions and visualize cheetahs.

Conclusions

The difference between teachers in control of teaching in response to observed student needs (Maniates & Mahiri, 2011) and using a scripted reading program (Harcourt, n.d.) is, as teachers pointed out, "Trophies decides" that action verbs will be taught with a story or adjectives or pronouns or past and present tense. Even if it makes sense to teach nouns and verbs first and subjects and predicates later, "Trophies decides" that subjects and predicates will be the grammatical focus of the students' attention at the beginning of the year. "The City is keeping an eye on the data gathered from the reading series tests and a secretary from central office sends an email to tell us what data we owe." Teachers had "tons of data" but needed time to analyze it to group students by the skills they needed to learn. According to Maniates & Mahiri (2011), teachers can infuse their own ideas into a scripted program to make the program responsive to students' needs. The result is deep learning of strategies and content. As shown in this study, third grade urban students can learn both comprehension strategies and content. Teachers' and students' anxieties about noise can be addressed. Students' malaise about completing tasks can be overcome. Time not available in core reading programs can be supplemented.

Teachers liked the feature of the scripted program that verbs and spelling words come from the story being read with the verbs highlighted [lunchtime conversation 2/18/11]. Teachers also liked the questions provided for students to consider when responding to stories. Teachers used the same questions in guided reading. An example "opinion" question asked, "If you changed the title of the story, what would you call it?" The questions, teachers thought, helped students self-monitor their comprehension. Teachers estimated that 60 percent of students could read without guidance but the rest needed "cajoling" to develop the moral or lesson, the main idea, or the topic sentence of a passage [lunchtime conversation 3/8/11]. The "cajoling" I practiced was urging students to apply comprehension strategies as they read about cheetahs. As

Armbruster, Lehr, & Osborn (n.d.) pointed out, the teacher's role is to "emphasize text comprehension… showing students how reading is a process of making sense out of text, or constructing meaning" (p. 46). That is what I did.

Educational Implications

Not-unexpected results of this research project were the benefits to students in learning strategies and content, to me in coming to appreciate the work of and pressures on the teachers and administrators in Striving Elementary School, and to the teachers in spending time in reflecting on their teaching by answering the questions I asked, for as Gaskell (2008) noted:

> Academics can spend time in schools, coming to appreciate the language, the culture, and the pressure that teachers, students, and administrators experience. Educators can have conversations with academic researchers, getting close, appreciative but critical attention to and feedback on their work. Each side can develop new insights and open up opportunities for further collaboration and contact. (p. 121)

In other words, this project and others like it are best conducted for the good of the society in the researched school. Elementary school students in Connecticut spend 988 hours, on average, in school each year. Striving Elementary School students spend 930 hours. Striving Elementary School devotes 387 hours to English Language Arts versus the state's average of 427 hours. In science Striving spends 81 hours versus the state average of 98 hours. The difference is in the opposite direction for physical education where Striving spends 14 more hours than the state average, health where Striving spends 26 more hours than the state average, and library media skills where Striving spends 18 more hours than the state average. Among Striving third

graders 37.4 percent scored at goal on the Connecticut Mastery test in reading (http://solutions1.emetric.net/cmtpublic/default.aspx), a growth of 3.8 percent over two years, slightly more than the state's growth of 3.7 percent reflecting the 58.3 percent of students who reached goal state-wide (http://solutions1.emetric.net/cmtpublic/default.aspx). Third graders do not take a state test in science, but of the fifth graders with whom I worked in a similar participant observation project in fourth grade the year before only 22.5 percent achieved goal in science on the Connecticut Mastery Test in contrast to 58.1 percent of students in the state.

Of the 563,869 students enrolled in public school in Connecticut in 2008-09; 35.5% were nonwhite; 30% low income; and 5% English language learners. Of the 802 students enrolled in Striving Elementary School, 72.2% were nonwhite, 79.9% low income; and 24.3% English language learners (Connecticut State Department of Education, 2011). Research insights from this project looking closely at these urban students in "educational need" form a pivotal question: What causes the reluctance of some urban learners to participate? Almasi (2003) defines comprehension as neither "bottom up" (relying on visual data) nor "top down" (relying on background knowledge) but a combination of both applied "simultaneously" (p. 74). Interactive reading results from readers' absorption in texts because they are invested in learning (Atwell, 2007). If we cannot find a way to inspire students to make that investment, then even if they have the background knowledge and reading skills needed and even if teachers spend two and one-half hours daily on literacy, then—minority or majority—eligible or ineligible for free and reduced lunch, students will not read; and we will have an achievement gap—between the United States and the rest of the world. As sadly, we will never have students who "Where you say it's time to read and they're like, 'Yes!'" (Maniates & Mahiri, 2011, p. 17).

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Appendix A

Lesson Plan

Subject Area: Reading Nonfiction; Content Focus Science

A. **Standard:** Common Core State Standard # 10: *Read and comprehend complex literary and information texts independently and proficiently*.

B. **Student Learning Objective):** Given a teacher demonstration of applying comprehension strategies (questioning/inferring) and demonstrating understanding of the content of a nonfiction article, students will be able to apply comprehension strategies to a nonfiction article and demonstrate understanding of its content.

C. **Learners' Background:** Students have read about cheetahs and know several comprehension strategies.

D. **Materials & Teacher-Developed Resources**

   a. **Texts:** *National Geographic* and Website articles on Cheetahs
   b. **Technology:** downloaded article and photographs (Website: http://nationalzoo.si.edu/Animals/AfricanSavanna/meetcheetahs.cfm)
   c. **Other materials:** graphic organizer, photographs of cheetahs

E. **Learning Activities**

   a. ***Initiation*:** Readers' brains are busy. Two important brain activities are asking questions and guessing (inferring) answers. Questioning and guessing (inferring) help us remember what we know, and knowing something about a topic is the key to understanding what we read.

   b. ***Motivational technique*:** Show students pictures of and lead a discussion about the cheetah cubs in the pictures to give students a reason to care about cheetah survival/extinction (See "Before reading" questions, below).

   c. ***Development*:**

      i. **Teacher modeling:** Read the first paragraph of the article and model questioning/inferring (on graphic organizer)

      ii. **Guided whole group practice:** Repeat with whole class using second paragraph.

iii. **Guided small group practice:** Repeat with partners using third paragraph.

iv. **Independent practice:** Individuals read remainder of article applying questioning/inferring (using questions below and students' questions).

v. **Group work:** Students work in small groups to share what they have learned about cheetahs before participating in whole group conversation on the topic (based on questions below and students' questions).

vi. **Questions to Promote Learning and Studying:**

1. **Before reading:** What do you already know about cheetahs? What questions do you have? What good guesses (inferences) do you make about the answers?
2. **While reading:** Are you finding any answers to your question? To mine? What good guesses (inferences) do you make about the answers?
3. **After reading:** What do you admire about cheetahs? Do you think cheetahs will become extinct?

***Closure*:** Alive brains are busy during reading. Wide awake brains ask questions and guess the answers and notice when the article answers their question. Asking questions and making inferences about the answers help us fill our brains with knowledge we can use next time we read. Brains filled with knowledge learn more from reading, listening, and viewing than brains that aren't filled with knowledge.

F. Evaluation of Student Learning:

a. **Formative:** Listen to students questions/good guesses. Read over their shoulders as they fill in their graphic organizers.

b. **Formal assessment at the end of the unit:** Letter to second graders or poem or nonfiction book about cheetahs explaining what you know and admire about them.

c. **Rubric for the formal assessment:**

Quality	Beginner	Progressing	Proficient	Advanced
Science Content	Almost none of the qualities	Some of the qualities	Letter, poem, or book includes 6 correct, relevant, and important facts about cheetahs.	All of proficient plus insight into survival and habitat of cheetahs
Language Arts Content	Almost none of the qualities	Some of the qualities	Letter, poem, or book is organized according to genre, elaborated, and mechanically correct.	All of proficient plus use of language shows engagement with the plight of cheetahs

G. Modifications for Individuals Needing Differentiated Instruction:

a. **ELL students:** Provide pictures of cheetahs; discuss what students already know about cats and how that might relate to cheetahs.

b. **Struggling students:** Form students into group with teacher to read text aloud and model question asking and answering text-related questions.

c. **Advanced students:** Invite students to investigate pre-selected web sites to research additional facts about cheetahs to share and include in their letter to cheetahs. Invite students to create a factual book about cheetahs for the class library.

Photographs from:
http://nationalzoo.si.edu/Animals/AfricanSavanna/CheetahPhotoGallery/2.cfm

The litter born in 2004 marked the first cheetah births in the Zoo's history.

As part of the Cheetah Species Survival Plan, the males have gone to the Milwaukee County Zoo, and the females have gone to New Jersey's Cape May Zoo.

The female cubs from the second litter left the Zoo in September 2006 for Disney's Animal Kingdom. The males went to Lowry Park Zoo in March 2007.

Write your questions and good guesses and answers you find:

My question about cheetahs:	My question about cheetahs:

The teacher's question: How do cheetahs obtain food?	**The teacher's question: How do cheetahs use camouflage?**