

**COMPREHENSION OF INFORMATIONAL TEXT BY KINDERGARTEN STUDENTS:  
ACTION RESEARCH OF REPEATED READ-ALOUDS OF INFORMATIONAL TEXT  
WITHIN A UNIT**

by

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In the current educational climate, kindergarten students are expected to be proficient at highly academic tasks. One such task is the comprehension of informational text. The purpose of this study was to investigate how teachers can support kindergarteners' comprehension of informational text through the use of repeated read-alouds within a unit. One intact kindergarten class of 25 students engaged in a two-week unit on the topic of bats, including interactive read-alouds of informational and narrative texts with repeated readings of two primary texts. Through observation of the read-aloud events, multiple choice assessments of content, and interviews with select students, I investigated how kindergarteners in this primary school engaged in learning from and comprehending informational text in the context of interactive read-alouds. In addition, I investigated how students in this class demonstrated acquisition and retention of the concepts presented in an informational text that is shared through an interactive read-aloud and what effect repeated readings of a text had on their comprehension. Findings indicated that the students in this kindergarten class utilized a variety of actions to access the text within the sociocultural context of the interactive read-aloud and were able to demonstrate comprehension of the text after the interactive read-aloud. Furthermore, repeated readings of the text resulted in increased acquisition and retention of concepts from the text. These results have implications for classroom practice as well as teacher preparation and professional development in the area of promoting comprehension of informational text by young students.

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## **PREFACE**

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This work is dedicated to my three children, Holden, Jonah, and Kathryn who inspire me in all I do. I am looking forward to having more time to spend with the three of you now.

## **1.0 INTRODUCTION**

### **1.1 PROBLEM AREA**

The changes in kindergarten programming in the United States have made it necessary for students to demonstrate comprehension of informational text at this young age. Their struggle with this task has been influenced by exposure to informational text and read-aloud practices (Duke, 2000; McKeown & Beck, 2003; Yopp & Yopp, 2006).

Kindergarten has evolved from an introduction to school focusing on spiritual and moral development to a fast-paced academic year (Bassok, Latham, & Rorem, 2016; Russell, 2011). For some time, early childhood programming, rich in phonics instruction, has allowed students to begin decoding text in the early grades. However, comprehension instruction was neglected; this practice can no longer continue (Durkin, 1978). In 2010, the National Governors Association Center for Best Practices, Council of Chief State School Officers published the Common Core State Standards, partially as a response to what was seen as insufficient progress toward NCLB goals (National Governors Association, 2010). These standards represented a considerable change from previous state standards and sought to “establish a consensus on expectations for student knowledge and skills that should be developed in Grades K-12” (Porter, McMaken, Hwang, & Yang, 2011, p. 103). Adoption of the standards was left to state legislatures. In Pennsylvania, The State Board of Education took recommendations from a committee of

educators in order to create a more rigorous set of standards. (Porter et al., 2011) The PA Core Standards were adopted in 2014, and kindergarten students are being held accountable for eleven standards related to reading informational text, including identifying main idea and supporting details and making connections. Because students are developing early literacy skills, this comprehension work is best addressed in the context of a read aloud. Read-alouds are a way for students to gain access to content and grapple with text that they would not have encountered otherwise. Although students are not reading the texts themselves, listening comprehension contributes in a significant and positive way to reading comprehension (Kraemer, McCabe, & Sinatra, 2012).

While reading aloud has traditionally been a focus and key practice in kindergarten, teachers overwhelmingly use narrative texts for this activity (Yopp & Yopp, 2006). Comprehension of informational text in particular may be affected by the limited amount of informational text that students encounter in the early grades (Duke, 2000; Hall, Sabey, & McClellan, 2005). This lack of exposure to and transaction with informational texts in the early grades has been offered as explanation for the “fourth grade slump” (Donovan & Smolkin, 2002; Kraemer et al., 2012), a phenomenon whereby students who seem to be suitably developing as readers begin to struggle when confronted with content area reading in fourth grade. Limiting exposure to diverse informational and other text formats in favor of narrative texts causes students to overgeneralize story grammar to all texts. Experience with expository formats is necessary to broaden student understanding of text structure (Duke & Bennett-Armistead, 2013).

The typical format of the read aloud activity has also influenced students’ ability to construct meaning from text. The teacher centered and directed IRE (Initiate – Respond – Evaluate) format has been the traditional approach to questioning associated with read-alouds,

and still persists in classrooms today (Hoffman, 2011; Varelas & Pappas, 2006). With the IRE approach, the teacher controls the conversation, leaving few opportunities for extended responses by students. With controlled questions and “correct” responses, there are also not opportunities for the students to engage in inquiry and construct meaning from the text. Dickinson and Smith (1994) found that analytical discussion during reading improved student comprehension. In these types of discussions, students had to consider the content and language of what was read throughout the read-aloud. Despite this finding, which has been upheld by other studies, McKeown and Beck (2003) discovered that teachers were not actually using this type of discussion in their classrooms.

## **1.2 PROBLEM OF PRACTICE**

For my problem of practice, I investigated how a teacher in one specific classroom can support kindergarteners’ comprehension of informational text. In the past, comprehension instruction was often reserved for the upper primary and intermediate grades, with kindergarten and even first grade focusing almost exclusively on developing the foundational skills necessary for decoding words. However, “a focus on comprehension is desirable from the very beginning of reading instruction” (RAND, 2002, p. 5), and postponing comprehension instruction results in missed early learning opportunities. For kindergarten students, this comprehension work can be done in the context of a read-aloud. Read-alouds are a way for students to gain access to content and grapple with text that they would not encounter otherwise. The traditional read aloud format includes reading a story followed by questions requiring recall of information. However, the most effective way to increase student comprehension is to actively construct meaning together

(Wiseman, 2011) as students and teachers do when they engage in interactive read-alouds, rather than focusing on merely isolated skills or simple recall. An interactive read-aloud is a classroom event that provides students with the opportunity to respond to open ended questions throughout the reading. Although the teacher provides the reading, both peers and the teacher may scaffold comprehension through meaningful dialogue (Wiseman, 2011).

A curriculum that engages kindergarten students in comprehending an informational text that is the focus of an interactive read-aloud must take into account: (a) students' abilities, relevant knowledge and experiences, as well as interests, (b) texts that offer opportunities at learning, and (c) activities before, during, and after reading that support engagement at a more than superficial level (RAND, 2002). Using this framework, I designed and implemented a unit including whole group read-aloud sessions in the classroom setting.

### **1.3 LINES OF INQUIRY**

This study investigated the process and outcomes of comprehension when kindergarteners engage in interactive read-alouds with their teacher and classmates. In addition, I investigated the effect of multiple readings of the same text on the learning of these students. The following questions were addressed:

- (a) How do kindergarteners in this primary school engage in learning from and comprehending informational text in the context of interactive read-alouds?
- (b) How do students in this class demonstrate acquisition and retention of the concepts presented in an informational text that is shared through an interactive read-aloud?

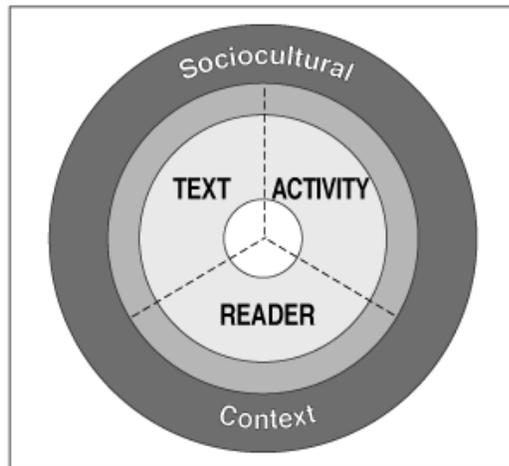
- (c) In what ways do repeated readings of an informational text influence acquisition and retention of concepts presented in the text for this class of kindergarten students?

## **1.4 THEORETICAL FRAMEWORK**

As a framework for thinking about comprehension and effective comprehension instruction, I turned to the RAND Reading Study Group's 2002 report. This group of fourteen experts in the field of reading was tasked with developing recommendations for a plan of research and development for comprehension instruction. With traditional comprehension instruction, teachers were typically expected to simply follow the instructions in the basal manual (Durkin, 1978). After students read the text, teachers initiated a question to which a student gave a response that the teacher then evaluated. If an incorrect answer was given, another student was selected until the correct response was provided. This IRE approach, which does not promote the development of critical thinking skills needed for comprehension, has also traditionally been used in read-aloud events. By its nature, this format limits discussion and puts control of the event squarely in the hands of the teacher.

In contrast to this approach, the RAND Reading Study Group developed a definition of comprehension and a heuristic for thinking about ways to implement instruction in this area. The RAND Reading Study Group defines comprehension as “the process of simultaneously extracting and constructing meaning through interaction and involvement with written language” (p. 11). Three elements, the reader, the text, and the activity, interact to produce comprehension. These essential components interact with each other within the larger sociocultural context (Figure 1). The classroom itself is a social context, built through language and social practice

where children take on a new role, as “student” (Packer & Goicoechea, 2000). This is particularly true for kindergarten students who may be experiencing formal schooling for the first time. Students are also participants in social contexts outside of the school that influence their background knowledge and approaches to learning.



**Figure 1. A Heuristic for Thinking About Reading Comprehension (RRSG, 2002, p. xiv)**

Within this sociocultural context, the heuristic argues for the need to consider the reader (or listener in the case of kindergarten), text, and activity when planning comprehension instruction. In the case of the reader, cognitive abilities, motivation and interest, and prior knowledge and experiences can all influence comprehension. The goal of comprehension instruction is to not only allow students to comprehend text ideas, but also to develop their understanding of how text ideas are expressed in language and language patterns. These abilities also vary among students. I will use the term “student” hereafter, in place of “reader”, as in this discussion the teacher will be reading the text to the students. The teacher as reader is another variable, and oral reading style needs to be considered (Brabham & Lynch-Brown, 2002).

In the case of the text, there are also several factors to consider. Genre, media form, content, and vocabulary load are text factors that influence comprehension. Accuracy of information is paramount in text selection, and the presentation of that information in a way that allows students to gain access to the concepts is also vital. To ensure accuracy, author credentials and sources need to be considered. To ensure accessibility, vocabulary complexity and presentation, sentence construction, and visuals need to be taken into consideration (Donovan, C. A. & Smolkin, 2002).

The activity related to the reading involves the purpose for the reading, the processing of the text, and the outcomes of the experience. The purpose can be set prior to reading and may come from the teacher or be self-selected by the student. For informational texts, learning from text is a goal. Pre-reading activities can play a significant role in setting the stage for learning and may include building background knowledge and introducing vocabulary or key concepts to support students in learning from the text content. During reading teachers can support students in engaging with text ideas through their prompts and questions.

Although the three elements of this heuristic are considered separately, they interact with each other in complex ways. A curriculum that engages kindergarten students in comprehending an informational text that is the focus of an interactive read-aloud, for example, must take into account: (a) students' abilities, relevant knowledge and experiences, as well as interests, (b) texts that offer opportunities at learning, and (c) activities before, during, and after reading that support engagement at a more than superficial level.

## 1.5 OVERVIEW OF STUDY

I used action research as the approach for this inquiry, as the goal was to understand practice within my own school setting, in order to improve it through developing a plan of action, implementing it, and observing the results. Reflection on the outcomes of the intervention was used to plan future action with the students (Herr & Anderson, 2014). The purpose of this study was to design a unit including repeated interactive read-alouds and to investigate the effects of these read-alouds on the comprehension of informational text by kindergarten students. I designed the unit and served as reader in the read-aloud sessions. This was a mixed methods study of the processes and outcomes of repeated interactive read-alouds of informational texts in a kindergarten class.

The unit focused on the topic of bats, covering both Next Generation Science Standards for Kindergarten as well as Pennsylvania Core Standards related to comprehending informational text. Instruction of the unit took place over the course of two weeks in October, 2016. Prior to the unit being taught, students took a pre-test to assess prior knowledge and completed a reading survey to assess attitude toward read-alouds in general, and the subject of bats in particular. During the unit, a primary text was read on three consecutive days. These interactive read-aloud sessions were video recorded. After each reading, all students took a brief multiple-choice assessment to gauge comprehension. Questions were presented to the students on a screen, with questions and answers read aloud to the students. Answers were recorded using Activotes, a handheld clicker device. In addition, four students participated in interviews to answer open-ended questions about the content of the unit and process of comprehension. In addition to the primary text, a second informational text and one narrative text were read a single time each

week. Although no assessments were given, the informational text read-aloud sessions were recorded and analyzed.

## **2.0 REVIEW OF LITERATURE**

In this chapter I will review the history of kindergarten, exploring the changes that have occurred in practices leading to current expectations that are placed on kindergarten students and teachers today. The role of the Common Core State Standards is significant in this discussion. I will also explore the role of read-alouds in classroom practice and how different approaches to read-alouds have been shown to result in different outcomes in relation to comprehension. Finally, I will explore the role of informational texts in primary grades. Specifically, I will examine reasons that narrative texts have dominated primary classrooms and the effect this has had on comprehension of informational texts.

### **2.1 HISTORY OF KINDERGARTEN**

Russell (2011) describes the metamorphosis that kindergarten in the United States has undergone since its inception. In the mid-1800's kindergarten was an introduction to learning without traditional academic subjects. Following Friederich Froebel's model, the focus of learning was on spiritual and moral development. Later, in the midst of the early 20th century progressive and child study movements, reformers such as Patty Smith Hill helped to shift the focus of kindergarten learning to a child development perspective. Learning often occurred through play and activities based on the child's interests (Hill, 1908; Rudnitski, 1995). Although experimental

kindergartens that focused on academics were introduced in the 1960's and 70's, most still had a developmental orientation. It was at this time that Dolores Durkin (1974-75) completed her study of children in a pre-school program designed to investigate the effects of early literacy instruction on future reading achievement. At the time of her study, preschool was not widespread and many parents believed four-year-olds should be home with their mothers. The kindergarten program that existed in the district where her study took place focused on socialization and the arts. During the first year of her study, a reading readiness component of the curriculum was not taught until first grade. The debate about appropriate early reading instruction ensued, and in many ways, continues to this day (Pressley & Allington, 2014).

Pearson (1985) describes typical early reading instruction occurring in the mid 1980's. Commercial reading programs taught phonics early and with intensity. The alphabet was also taught early, often in kindergarten readiness programs. The focus was on specific skills that were tested at the end of each unit, and practice materials were completed independently. This attention to phonics instruction was supported by research that was available at the time, but not at the expense of comprehension work. Jeanne Chall (1989), a proponent of systematic, explicit phonics instruction also noted the importance of authentic literature and writing in a complete language arts curriculum. Nevertheless, the results of kindergarten reading instruction met educators' expectations in that students were successful on phonics assessments. Although students learned these early decoding skills, after third grade some began to exhibit comprehension difficulties. Durkin (1978-79) found that comprehension was not taught at all in primary grades, and what was called instruction in the intermediate grades was actually assessment. She observed that after students read the text, teachers initiated a question to which a student gave a response that the teacher then evaluated. If an incorrect answer was given,

another student was selected until the correct response was provided. This is known as an IRE (Initiate-Response-Evaluate) approach. Teachers generally followed the instructions in the basal manual, which provided these questions.

The 1990's "Standards movement" introduced increasingly rigorous academic standards for kindergarten, and according to Russell (2011), "standardized testing and accountability have contributed to the intensification of academic practices" (p. 237). By 2000, schools had implemented formal curricula including reading and math skills. In other words, kindergarten became the new first grade. Evidence suggests that teachers increasingly focus on academics at the expense of social skills and play. Federal policies such as No Child Left Behind (2002) and Reading First brought focus to early literacy, but caused schools to significantly increase instructional time for literacy at the expense of content areas. Pressure has been placed on teachers to have students master academic skills at an early age (Hoffman, Collins, & Schickedanz, 2015). How might this impact future reading achievement and comprehension development? Diamond, Barnett, Thomas, and Monro (2007) suggest that this loss of attention to play and social development may in fact be detrimental, as dramatic play can be used to develop executive function skills such as self-discipline and cognitive flexibility which could be more beneficial to later success in school and life than early academic skills. The National Association for the Education of Young Children (NAEYC, 2009) cautions that "standards overload" (p. 4) can have negative effects on young children. High-pressure classrooms don't foster a love of learning, offer invitations for risk-taking, or offer opportunities for children to develop a sense of competence and ability. That being said, rigorous academic standards are not necessarily in opposition to developmentally appropriate practices, as recommended by NAEYC. These standards need to be implemented in a caring classroom community where children are actively

engaged with opportunities to interact with the teacher and their peers. One example of developmentally appropriate practice is the read-aloud event.

## **2.2 READ-ALOUDS**

Teachers and parents have always read stories to small children and research has shown that there are many positive benefits associated with this activity (Beck & McKeown, 2001; Carter & Abrahamson, 1991; Hoffman, 2011; Neugbauer & Curie-Rubin, 2009). However, the nature of read-alouds, and the understanding of how they can be used effectively in the classroom has changed dramatically over the past several decades. When Durkin (1974-75) completed her study, she noted that there was a story time in kindergarten, but this reading was unrelated to any comprehension instruction. In the late 1970's telling children to listen carefully and then asking questions afterward was considered instruction (Cassidy & Vukelich, 1977). Since that time, the importance of setting a purpose for reading has been acknowledged. Pearson (1985) highlights research that shows asking questions that activate relevant background knowledge and predicting what will happen prior to reading results in better comprehension. Purpose setting questions that are maintained throughout the reading are posed to the students. Post reading, these questions are revisited. As discussed previously, the teacher centered and directed IRE format has been the traditional approach to questioning associated with read-alouds and still persists in classrooms today (Hoffman, 2011; Lennox, 2011; Varelas & Pappas, 2006). With the IRE approach, the teacher controls the conversation, leaving few opportunities for extended responses by students. With controlled questions and "correct" responses, there are also not opportunities for the students to construct meaning from the text. Deep understanding does not

take place, and many of these discussions last fewer than five minutes (Brabham and Lynch-Brown, 2002).

Dickinson and Smith (1994) found that analytical discussion during reading improved student comprehension. In these types of discussions, students had to consider the content and language of what was read throughout the read-aloud. The teachers and students worked together to build comprehension. Despite evidence that allowing students to coconstruct meaning results in improved comprehension, McKeown and Beck (2003) discovered that teachers were not actually using this type of discussion in their classrooms. In response, they developed Text Talk, a read aloud program to engage students in discussion and prompt response to decontextualized language. After development, they piloted the program in two first grades in a low achieving urban elementary school. The study found that students were able to contribute complex responses to the text and that the program supported children's vocabulary and comprehension.

Developing vocabulary knowledge and comprehension skills including inferential thinking occurs when a quality text is shared by a skillful teacher. Interactive read-alouds involve modeling and scaffolding in a way that allows children to make connections between their own experiences and the text (Lennox, 2011).

Brabham and Lynch-Brown (2002) also investigated the effect of an interactive discussion on the vocabulary and comprehension development of first and third graders. They compared the gains made by students involved in an interactive discussion to students in groups that experienced read-alouds with a performance style (that included discussion either before or after the reading) and "just reading" with no discussion. The students in the interactive discussion group significantly outperformed the other two in vocabulary development, with the

“just reading” group producing the lowest scores. A significant difference in comprehension scores was not found, which the authors speculate is the result of the stance taken by the teachers during the read-aloud. Rosenblatt (1982) asserts that when readers engage in a reading event they adopt a stance, or mental set based on the purpose for reading. This stance is positioned on a continuum from efferent to an aesthetic. An efferent stance is used when the goal is to take information away from the text. An aesthetic stance is taken when reading a story to make a personal connection and produce an emotional response. It is not the text itself that is somewhere on the efferent to aesthetic continuum, but rather the purpose that the reader sets. The efferent stance taken by the reader during the interactive discussion that led to vocabulary development interrupted the flow of the story, and thus did not produce significant comprehension gains, although they also note that comprehension was not hindered. There could be an indirect influence on comprehension, as increasing vocabulary benefits students with future comprehension tasks. Furthermore, while taking an aesthetic stance may allow students to experience the flow of a narrative and better experience the whole text, it would not be appropriate for improving comprehension of informational text.

In many parts of the world, telling and reading stories to children is an important part of early literacy development. In Calca, Peru, Neugbauer and Curie-Rubin (2009) found that the IRE format of read alouds used in the United States was typical there as well. They implemented a read aloud program utilizing an interactive read aloud format in two first grade classrooms. These classroom teachers received professional development on read-aloud pedagogy including literal and inferential questioning techniques. The students engaged in the interactive read-alouds outperformed their peers in the control classrooms where the new read aloud format was not used.

Poveda (2003) investigated the use of read-alouds in an urban, multi-ethnic public school in a working-class neighborhood in Madrid, Spain. As we see in the United States, minority and low socioeconomic status background students enter school with less familiarity with uses of literacy. Exposure to books in kindergarten can help ameliorate these effects. Many teachers in Spain organize read-alouds as part of the daily routine. Interactive text-focused read-alouds that employ questioning before, during, and after reading are implemented, although whether questions followed the IRE approach or a more interactive discussion format were not discussed. In this study, Poveda did not try to assess effective instruction, but rather examined the read aloud as a social practice. The teacher was working with students with limited book knowledge, and the teacher saw read-alouds as a chance to formally expose the students to literature. Although this study reflects the practices of only one teacher, she did exclusively use narrative texts in her read-alouds, indicating that teachers in Spain may also have a bias toward narrative text for young students.

Recently, considerations of culturally relevant pedagogy in the context of a read aloud have been explored (May, 2011; Varelas & Pappas, 2006). These studies refute deficit theories that suggest students from minority or low-income homes enter school without the background knowledge that will allow them to be successful in an academic setting. Varelas and Pappas (2006) conducted their study in an urban school district with first and second graders. While acknowledging that these students “are not members of a culture of power” and “do not share the relevant cultural capital” (p.250), the authors saw giving them access to genres of academic social language and science discourse a matter of social justice. Students gained access by joining discussions using knowledge from cultural practices that were part of their everyday lives. Through a multimodal, multiliteracies approach to science instruction that included read-

alouds of informational text, the students did demonstrate comprehension and academic achievement.

May (2011) worked with a similar low-income population, although with slightly older students (3rd and 4th grade). The teacher in this study was committed to a culturally relevant pedagogy as seen in her text selection and interactive read-aloud practices. The teacher selected multicultural literature that avoided Western hegemonic portrayals of different cultural groups. Students were empowered to participate in interactive read-alouds, and were further validated by the teacher “animating” them by repeating and affirming their participation. Beyond affirming the cultural identity of her students, these interactive read alouds were opportunities to teach content and text features, promote reading skills such as paraphrasing and comprehension, and draw attention to big ideas. As with many read aloud programs, narrative texts were exclusively selected.

### **2.3 INFORMATIONAL TEXT IN PRIMARY GRADES**

In primary classrooms, narrative texts are overwhelmingly chosen over informational texts for read aloud events. Jim Trelease, in *The Read-Aloud Handbook* (1979) advocated for fiction over nonfiction for read-alouds because he believed they were more relevant and interesting for children (Carter & Abrahamson, 1991). However, research indicates that informational texts can be motivational for some students who don’t like stories but have interest in specific content (Duke & Bennett-Armistead, 2013; Yopp & Yopp, 2006). Kraemer et al. (2012) reported that a majority of students in their study preferred informational text.

There are many other important reasons why informational text deserves a prominent place in primary classrooms. Duke and Bennett-Armistead (2013) offer a compelling argument for the use of informational text with even our youngest learners. First, informational text must be read in all content areas when these students reach the intermediate grades and beyond. Early exposure can lay a foundation for this. Outside of school, in society and on the Internet, students will encounter massive amounts of informational text that they will need to be able to read critically. These reasons may seem to indicate that the use of informational text is only for future benefit, but even in the early years, children have a curiosity about the natural and social world that informational text can help them to explore. It also allows them to develop vocabulary and literacy skills that are beneficial in the primary grades.

In her landmark 2000 study, Nell Duke found that only 3.6 minutes per day was spent on informational text instruction in the first grade classrooms that she observed. Even less time (1.9 minutes per day) was spent on informational text in low socio-economic classrooms, which is concerning, because students from low-income families often have lower academic achievement. Exposure to the concepts found in informational text is necessary to build much needed human capital. Lindo (2014) argues that “having lower levels of human capital may serve as the largest hindrance to the development of reading comprehension skill” (p. 291). Clearly schools have an obligation to provide experiences to raise these levels. Yopp and Yopp (2006) found that in classrooms of preschool through third grade, read-alouds were overwhelmingly narrative in nature. Narrative texts accounted for 74% of the read-alouds reported by the kindergarten teachers, compared to 9% for informational texts. They argue that this is problematic because benefits of expository text include providing answers to questions about world and exposure to specialized vocabulary and different text structures.

Some educators feel that young children struggle with expository text because they are not developmentally ready to handle it. Expository text has in fact been shown to be more difficult for students to comprehend than narrative text (Lehto & Anttila, 2003). However, the notion that kindergarten students are not ready for expository text has been refuted by several studies (Duke & Kays, 1998; Duke & Tower, 2004; Smolkin & Donovan, 2001, 2003; Yopp & Yopp, 2006). Duke and Kays (1998) asked kindergarten students to “pretend to read” a narrative book and an expository book in September and again in December. After exposure to informational text in the form of read-alouds for three months, students were able to incorporate more characteristics of expository text into their responses. This was true even though a traditional read-aloud method rather than interactive discussion was used. Furthermore, students self-selected informational text during independent reading and listening center. Smolkin and Donovan (2003) also found that students, and boys in particular, were drawn to informational books.

Lee, Lee, Han, and Schickedanz (2011) did a comparative study of teacher attitudes and read-aloud practices in the United States and Korea. They found that while preschool teachers in the United States believe that children enjoy fiction more than nonfiction, teachers in Korea hold the opposite view. In Korean schools, nonfiction tends to dominate, as the cultural environment promotes learning facts and concepts over creativity or imagination. The teachers believe that children prefer nonfiction and are better able to relate the texts to their own world. Korean classrooms also provide access to more nonfiction books than their U.S. counterpart. Findings from this study indicate that kindergartens and even preschools in the United States could benefit from incorporation of more informational text.

In advocating for nonfiction in a read-aloud program, Carter and Abrahamson (1991) suggest beginning with informational narratives or other genres that contain narrative style, such as real life accounts. “Effective science programs will begin with picture storybooks to create a love of science and then move to informational texts” (Donovan & Smolkin, 2002, p. 504). Informational narratives are in fact what Heisey and Kucan (2010) used when they investigated the use of informational text read-alouds to teach science concepts to first and second grade students. This study utilized carefully planned questions after small chunks of text. Questions focused on big ideas, content-specific information, text-to-text connections, and vocabulary. They found that students who engaged in discussion during reading could better provide text based information to support their answers and demonstrated more depth of understanding than students questioned only post-reading. These students had more opportunity to talk about the text and made better intertextual connections. The three texts used in the study shared similar themes related to scientific inquiry, and another finding indicated that “multiple exposures to a related concept across stories afforded students more time to build a mental representation of important ideas” (p. 675). In other words, students had a deeper understanding of the target concept after the third reading than they did after the first. Unfortunately, Brabham & Lynch-Brown (2002) found that embedding read-alouds in a larger unit of study was not a common practice in the elementary classrooms that they observed.

While informational narratives and even stories can be a valuable component of a reading program, students also need to become familiar with the features of expository text structures. Dual purpose texts, such as *The Magic School Bus* series, provide a running storyline, with facts presented in diagrams or insets, thereby stretching across two genres. Because of the narrative component, these books are not classified as expository. Children need to learn that not all texts

have characters, settings, and plots. Texts can also describe, sequence, compare and contrast, explore cause and effect, and explore problem and solution. This can be explicitly taught to children by using authentic texts, and they can develop a more sophisticated understanding of text structure from an early age. Children can also become familiar with text features such as real photographs with captions, charts, graphs, diagrams, and other visuals that can help them to make sense of the text. The teacher can model how to use these features to deepen understanding of the concepts being presented and through a gradual release of responsibility students can begin to use recognize and use these features themselves. Hoffman et al. (2015) provide compelling evidence that expository text is appropriate for young children. Although they agree that the narrative structure is preferred for topics related to events, it is not as well suited for science concept development.

## **3.0 METHODS**

### **3.1 METHODS OVERVIEW**

This study employed mixed methods to gather data regarding the process and outcomes of comprehension work during an interactive read-aloud in a kindergarten classroom. Data was collected through a survey, observation, pre-test and post-test comparisons, and interviews. Evidence of processes of comprehension included actions taken by the students in the form of responses to the teacher, the text, and each other during the read-aloud event. Transcripts of the interactive read-alouds were analyzed using process analysis. This will be discussed further in chapter 4. Learning outcomes were measured through student answers to multiple-choice and open-ended questions about the content of the unit. Statistical analysis of these scores was used to demonstrate comprehension outcomes.

#### **3.1.1 Student**

Consideration of student prior knowledge, interest, and motivation informed this study. A week prior to the unit of study, students took a 20-point researcher designed multiple-choice assessment of core unit concepts to assess prior-knowledge. (See Appendix A) In addition, they completed an interest and motivation survey. (See Appendix B) This survey was adapted from The Elementary Reading Attitude Survey (ERAS). The ERAS consists of twenty questions on a

Likert-like scale, where four pictures of Garfield are used to represent feelings ranging from very happy to very upset. The questions survey students' attitudes toward recreational and academic reading. This survey, which is normed for students in grades 1-6, goes beyond the scope of this study and is too lengthy for students in the beginning of kindergarten. Questions therefore used the "Garfield" scale from the survey but targeted listening to stories, informational text in general, and learning about bats in particular. I scored the attitude survey to determine level of interest in listening to books in general and the subjects of bats in particular. As per the ERAS directions, each item was scored on a 4-point scale with the leftmost (happiest) Garfield counting for 4-points. See Table 1 for choices and corresponding point values.

**Table 1.** Reading Survey Scoring

4 points	3 points	2 points	1 point
			

To interpret the scores, I could not use the norms provided. However, I was able to tell relative interest by comparing scores among students. I was also able to informally note where scores fell on the scale as a whole class. The average score for the class was 41.8, falling well above a neutral score of 30. In general then, this class has a positive association with books, read-alouds, and learning. As a whole, the class scored listening to informational text (3.8) higher than listening to made-up stories (3.32). Most students (80%) chose the happiest Garfield when asked about learning about bats, indicating that this was a high interest topic for the group.

Listening to a book more than once received the lowest score. Although at 3.16 it still indicates a more positive than negative attitude, five students chose the least happy Garfield and two chose the slightly unhappy Garfield indicating that there was a part of the group that had negative feelings toward repeated readings.

Four students were chosen to participate in interviews as well. Prior to the unit, these students were asked questions about their approaches to learning and the content that was covered in the unit. See Appendix C for the interview protocol. To represent the range of academic abilities present in the classroom, one student performing well below grade level, one student performing slightly below grade level, one student performing on grade level, and one student performing above grade level were chosen as interview subjects. The determination of level was made through consultation with the classroom teacher using performance on ELA work in the classroom and beginning of the year assessments (DIBELS and curriculum based) as criteria. The classroom teacher also made recommendations based on student attendance and willingness to talk. These factors were important because excessive absence would interfere with hearing the text repeated times and it was important that students felt comfortable talking about what they learned. Therefore students with excessive absences or unwillingness to speak in class were excluded from consideration as interview subjects.

### **3.1.2 Text**

As stressed in multiple studies (Donovan & Smolkin, 2002; Duke & Tower, 2004; Hoffman, Collins, & Schickedanz, 2015), the selection of quality text is extremely important. For this study, the 35 informational books on the topic of bats in the school library collection were considered for inclusion. The first consideration was accurate and up to date information for the

content under investigation. Unfortunately, some published materials can “provide misinformation or inadvertently reinforce children’s misconceptions” (Donovan & Smolkin, 2002, p. 508). To avoid this pitfall, I investigated the author’s credentials and documentation of sources for books chosen for this unit.

In addition to accuracy, the language of the book should be complex, but accessible, as students won’t learn much from a book that is too watered down or too complicated. By making the book easy enough for young children, authors may not include enough information (Duke and Tower, 2004). Children need to learn from the text for the experience to be worthwhile and to hold their interest. Beyond just readability level, complexity of text involves depth and breadth of content, density of informational ideas, the amount of explicit versus implicit content, and lexical density (Donovan & Smolkin, 2002).

Engaging visuals are also an essential component of high-quality texts (Hoffman et al., 2015) as “the illustrations contain much of the information to which children will attend” (Donovan & Smolkin, 2002, p. 510). To support comprehension, I chose books with illustrations that represent textual content rather than provide embellishment unrelated to the written words. Captions for illustrations and diagrams are also extremely important because they direct the reader’s attention to important information. Therefore, when choosing texts for this unit, I analyzed the books for accurate and up to date content, complex but accessible language, engaging visuals, and useful expository text features. See Appendix D for selection checklist.

### **3.1.3 Activity**

I designed and implemented a two-week unit on bats including interactive read-alouds. Kindergarten teachers in this district typically teach a one or two-week unit on bats near

Halloween. I chose to make the unit two weeks in order to complete multiple readings of a text two times. The unit was constructed using the PA Core standards in ELA for reading informational text as well as the Next Generation Science Standards for kindergarten. Table 2 describes the learning goals of the unit.

**Table 2.** Unit goals

<b>Big Ideas</b>	<b>Key Concepts</b>	<b>Vocabulary</b>
<b>Week 1</b>		
Bats are animals, so they need, air, food, water, and shelter to survive	Bats are nocturnal.	Nocturnal
Scientists classify animals based on characteristics.	Bats are mammals.	Mammal
Different structures have specific functions for animals.		Unique
There are many different kinds of bats.		Echolocation
<b>Week Two</b>		
Bats are beneficial to the environment.	Bats eat insects, pollinate flowers, and spread seeds.	Beneficial
	Bats are threatened worldwide, and their colonies and habitats are destroyed — both intentionally and inadvertently.	Migrate
		Hibernate

Each week consisted of three readings of a primary text as well as an additional informational text and a narrative text. The six readings of the two primary texts and the additional informational text read-aloud were video recorded. In addition, a separate audio recording was made as a backup data collection source. These read-aloud sessions followed the format designed by Beck and McKeown (2001) with Text Talk for conducting an interactive

read-aloud. Following each read-aloud of a primary text, students took a ten point multiple-choice assessment. The questions and answers were projected on a screen and read aloud to students who answered via a hand-held clicker. Following this assessment, on the read-aloud on non-assessed days, students completed a post-reading activity as a whole group. Table 3 lists the books, assessments, and activities for the unit.

After each read-aloud, I also conducted interviews with four students to allow open-ended responses to demonstrate comprehension of the text. These interviews were recorded and transcribed.

To address the question of the effect of repeated readings on comprehension, a primary text was chosen for each week. This primary text was read initially on Monday, a second time on Tuesday, and a third time on Wednesday. I followed the procedure for repeated read-alouds developed by McGee and Schickedanz (2007), which are also in line with the Text Talk procedure. I adapted the protocol that they used with narrative text to be appropriate for informational text. Due to the length of the books, the entire book was not read each time. Rather, sections that covered the big ideas and key concepts were selected. This allowed time for discussion of ideas rather than passive listening.

Alternate versions of the assessment used to measure prior knowledge were given after each of these readings. Also, the same students were interviewed after each reading, and their responses were recorded and transcribed.

**Table 3.** Unit plan

Day	Interactive Read-Aloud Book	Assessment	Post-reading Activity
Monday	<i>Bats</i> Time for Kids 1 <sup>st</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice questions using activotes</li> <li>• Interviews</li> </ul>	Bat food

**Table 3** continued

Tuesday	<i>Bats</i> Time for Kids 2 <sup>nd</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice using activotes</li> <li>• Interviews</li> </ul>	Bat Homes
Wednesday	<i>Bats</i> Time for Kids 3 <sup>rd</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice using activotes</li> <li>• Interviews</li> </ul>	Batty words
Thursday	(Animals in my Backyard) <i>Bats</i> by Aaron Carr		Bat diagram
Friday	<i>Stellaluna</i> by Janell Cannon		Bat/ Bird Venn diagram
Monday	<i>Bats: Hunters of the Night</i> by Elaine Landau 1 <sup>st</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice using activotes</li> <li>• Interview</li> </ul>	Helpful Bats
Tuesday	<i>Bats: Hunters of the Night</i> by Elaine Landau 2 <sup>nd</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice using activotes</li> <li>• Interviews</li> </ul>	Bats Can...
Wednesday	<i>Bats: Hunters of the Night</i> by Elaine Landau 3 <sup>rd</sup> read	<ul style="list-style-type: none"> <li>• 10 Multiple choice using activotes</li> <li>• Interviews</li> </ul>	Batty Words
Thursday	<i>Bats: Nocturnal Flyers</i> by Rebecca Rissman		Bat facts and misconceptions
Friday	<i>Bats in the Library</i> by Brian Lies		

### 3.2 PARTICIPANTS

I investigated the development of comprehension of informational texts by kindergarten students in a single class of 25 students in a small suburban primary school that services students in kindergarten through grade 3. The classroom teacher has 13 years of teaching experience,

including 8 in kindergarten and prior experience as a reading specialist. Approximately twice a month, the class engages in units of study for non-fiction texts when informational books are read daily. These books are read one time. During read-alouds, low level questions assess literal recall, and the teacher reports that some students participate in the discussion while others just “sit back and kind of absorb it.” The quiet students demonstrate their comprehension through post reading activities such as writing or sequencing.

The racial makeup of the school is 91% white, 3% African American, 2.5% multi-racial, 2.5% Hispanic, and 1% Asian. 20% of the students are economically disadvantaged, as evidenced by qualification for free and reduced lunch, and 16% receive special education services. The full day academic style program is representative of many schools in Pennsylvania. The school district has recently developed a new curriculum based on the Pennsylvania Core Standards, which means instruction of informational text is expected in kindergarten. This curriculum specifies a few topics to be covered by kindergarten teachers, but does not include required readings, specific content ideas, or instructional strategies to implement the units. Although “Bats” is not a topic specified in the curriculum, kindergarten teachers throughout the district use this topic to cover the curriculum near Halloween.

In studying one classroom, observational data provided a rich picture of instructional practices leading to a deep understanding of how comprehension manifests in this setting. There are several limitations to the context I used. First, I work in the school, so I was mindful of researcher positionality and any biases that arise from being part of the institution under study. As the school librarian, I typically see a class once every six days for a forty-minute period consisting of a lesson, story, and book borrowing. In this capacity I have the opportunity to conduct interactive read-alouds. However, the schedule does not lend itself to the deep study of

concepts found in a unit or close reading through multiple reads of a text. Therefore, I was able to collaborate with a classroom teacher in order to complete this study. To become more familiar with the students in the class, I assisted during center time for a few weeks prior to the study, in addition to seeing the students during their regularly scheduled library period. I also visited the class four times during their ELA block to allow students to become familiar with the activotes. I developed quizzes associated with their phonics unit to allow them to become comfortable using the hand-held clickers. The week prior to the unit I visited the classroom to administer the pre-test via activotes. In their library class that week, they also took the interest survey. During the two weeks of the study, I visited the classroom for fifty minutes during their ELA block. We started each session with the interactive read-aloud session. This was followed by assessments or a follow-up activity.

The sample size was limited to one classroom, and is therefore rather small. Findings may not be generalizable outside the population of this classroom and school setting.

## **4.0 FINDINGS**

### **4.1 OVERVIEW**

The purpose of this study was to investigate how teachers can support kindergarteners' comprehension of informational text through the use of repeated read-alouds within a unit. Therefore, I examined the process of comprehension and learning that occurred during the interactive read-aloud events and the acquisition and retention of unit concepts.

Data collection occurred over the course of three weeks, including one week prior to the unit of study and two weeks of the instructional unit being taught. Data collected included measures of prior knowledge and interest for students, transcripts of the read-alouds events, multiple-choice assessments, and interviews. Analysis of these data sought to answer the following three questions:

- (a) How do kindergarteners in this primary school engage in learning from and comprehending informational text in the context of interactive read-alouds?
- (b) How do students in this class demonstrate acquisition and retention of the concepts presented in an informational text that is shared through an interactive read-aloud?
- (c) In what ways do repeated readings of an informational text influence acquisition and retention of concepts presented in the text for this class of kindergarten students?

## 4.2 RESEARCH QUESTION 1

*How do kindergarteners in this primary school engage in learning from and comprehending informational text in the context of interactive read-alouds?*

To answer this question, a variety of data were collected and analyzed. I primarily relied upon transcripts of the read-aloud events. I also used turn-and-talk responses and transcripts of interviews. I fully transcribed the video recordings of the read-aloud sessions. I used process analysis to analyze the transcripts, because the actions of the students during the read-aloud sessions provided evidence of engagement in learning and comprehension. Process coding uses “-ing” words for codes and is appropriate when coding an observable activity such as students participating in a read-aloud event. (Saldana, 2016). Initial coding developed broad categories of actions taken by students. In a second round of coding, subcodes were developed to detail actions more explicitly. To check validity, the classroom teacher read and coded two full transcripts. There was strong agreement on what was observed and any differences were resolved through discussion. This code list was also applied to student responses to turn-and-talk questions and student responses to interview questions designed to address the process of comprehension. Student responses during “turn and talk” questions were recorded on several iPads with Audio Notebook. Although not all pairs were recorded, a representation of responses was collected verbatim.

I found that kindergarteners in this primary school engage in learning from and comprehending informational text in the context of interactive read-alouds through the following actions: answering teacher questions, connecting to prior knowledge, responding to classmates, using visual aids, asking questions, responding chorally, acting out the text, and making predictions.

#### 4.2.1 Answering teacher questions

During each read aloud session, students responded to questions posed by the teacher. Answering questions was subcoded by the depth of understanding of the text required to answer the question. These researcher-generated codes were developed by adapting Norman Webb’s Depth of Knowledge levels (Webb, 2002). See table 4 for an explanation of levels. Sample questions and student responses are also included. (All names are pseudonyms).

**Table 4.** Levels of questioning

Level	Day	Sample Questions	Response
0 <ul style="list-style-type: none"> <li>required prior knowledge only</li> <li>no comprehension of text required</li> </ul>	1	(discussion of what animals need to survive) Where do we get air?	Jacob: outside
1 <ul style="list-style-type: none"> <li>required literal recall of information stated in the text</li> <li>asked immediately following text being read, or delayed to review important vocabulary words and concepts</li> </ul>	1	What did we just hear are good places for roosts?	Sharon: a cave Kathryn: an attic Emma: tree Ava: cellar
	1	Then we found out how bats use a special sense of hearing to find their prey. Do you remember what that’s called Sharon?	Sharon: echolocation
	2	Does anyone remember another reason bats might need claws?	Dominic: So they could grab food
2 <ul style="list-style-type: none"> <li>required students to apply a skill or concept to a new situation.</li> </ul>	1	When could you see a bat flying around at home?  And why do you think that?	Brian and Ava: At night  Ava: because they are nocturnal

**Table 4** continued

<ul style="list-style-type: none"> <li>• may have involved classification or inference</li> </ul>	<p>3</p> <p>4</p>	<p>Text: <i>Vampire bats are found in Central and South America.</i>  T: So, do vampire bats live around here?</p> <p>Now, we know that bats are mammals, so when we hear that she was with her mother, how does that fit with her being a mammal? Kathryn?</p> <p>Do we all remember that mammals drink their mother's milk?</p> <p>So it makes sense that babies stay with their mother.</p>	<p>Students: No</p> <p>Kathryn: Because when it's thirsty it would drink milk from its belly.</p> <p>Students: yeah</p>
<p>3</p> <ul style="list-style-type: none"> <li>• required students to use strategic thinking.</li> <li>• may have involved making hypotheses or comparisons.</li> </ul>	<p>4</p>	<p>What do you think would happen if there were no bats around eating the insects?  Kathryn?</p> <p>T: Who might?</p>	<p>Kathryn: um, they might hurt people</p> <p>Kathryn: the insects</p>

Students were generally successful with questions that required literal recall. When a student was unable to answer a level 1 question correctly, either the text was reread and the student was given another chance to answer, or another student answered the question, and the initial student was given a chance to show they now knew the information. For example, on the second day of the second week, the following exchange occurred.

**Text:** *Bats are helpful to humans. Micro bats eat harmful insects. Many of these insects destroy crops and spread disease.*

**Investigator:** Oh boy, what did she say the insects do that is bad news?

**Jacob:** um, break, um harmful, um break bats homes.

**Investigator:** It did not tell us that insects break bat's homes. What did it tell us?

**Mia:** They spread disease.

**Investigator:** That's right. What did it say Jacob?

**Jacob:** spread disease

Sometimes scaffolding was necessary to help students draw conclusions from the text. Using information from the text, students were initially unable to make an inference about what would happen to bats if they were awakened during hibernation. Rereading a portion of the text and offering prompts helped the students to work through this question.

**Investigator:** What would happen if people woke up the bats while they were hibernating?

**James:** They would attack.

**Investigator:** I don't think we heard anything that said bats attack people. We heard they're gentle, shy creatures. Right? So we would not expect bats to attack. Hmm, Let me think about why it said they were hibernating. I am going to go back and read it again, because when we read it again, that helps us understand. Listen to **why** they hibernate.

**Text:** *Others hibernate, spending the winter in a deep sleep. This helps them to live through the winter when there is little food.*

**Investigator:** So, Sally, what would happen if they woke up?

**Sally:** They go sleep in the night.

**Investigator:** Well, they're going to sleep all the time in the winter. What would happen if they woke up and there was no food around? Anthony?

**Anthony:** Eat it all.

**Investigator:** There is no food around to eat. Sophia?

**Sophia:** They would be hungry.

**Investigator:** Yes, can they live without food?

**students:** no

**Investigator:** No, we know that. So what would happen to the bats if there was no food?

**William:** They would die.

**Investigator:** So, if people wake them up while they are hibernating, they could die.

Coming into the unit, Anthony had background knowledge that bats eat meat. Although it is true that some bats eat meat, most do not, and this prior knowledge interfered with his comprehension. A unit goal was to understand that an animal's features had specific functions. Therefore, looking at facial features should help a student determine what a particular bat eats. Because Anthony clung to his belief that bats eat meat, he was unable to draw conclusions about a bat's diet from a photograph. To aid comprehension, I modeled thinking about specific features that were relevant to the question.

**Investigator:** I think you're absolutely right, we want to see what he looks like up close, and up close I can see the big nose, and big eyes, and small ears. So, what do you think this bat eats? What do you think? (many hands up)

**Anthony:** meat

**Investigator:** no, this bat would not eat meat, because we don't see sharp claws and teeth for catching meat. We see a big nose for smelling, big eyes for seeing, and small ears. That means it doesn't need to listen for its food. What do you think Holden?

**Holden:** uh, it's a fruit bat.

Higher-level questions were initially asked to the students during turn-and-talk time. For example, on the first day, students were asked, "Why would it be helpful for bats to have lighter bones" and "Are there some bats who would not need echolocation?" Although some students made the connection between lighter bones and flying, there were a lot of incorrect conclusions drawn and off-topic answers made when these types of questions were asked. For example, to answer the first, one student thought "Maybe because they are in the dark" and for the second, a student responded, "I think bats go to the bathroom." This pattern of off-topic and inaccurate

information was prevalent during the turn-and-talk discussions of the first two readings. After a debriefing with the classroom teacher, we decided to use the turn-and-talk questions to emphasize important information at a literal recall level. Higher-level questioning was reserved for whole-group discussion where scaffolding could be provided and feedback given to correct misconceptions. Once these questions were discussed in the whole-group, they could be asked as a turn-and-talk question during a subsequent rereading of the text. For example, on the third day, turn-and-talk questions included “What do bats eat?” and “What would be good shelter for bats?” Because these questions had multiple answers but could be literally recalled from the text and discussion, students were able to talk to one another, stay on task, and generate correct responses.

During each read-aloud event, answering teacher questions was an important strategy for students to learn from and comprehend the text. Many questions assessed literal recall of text concepts and vocabulary words. Students were generally successful with these questions. Questions that required higher order thinking were also asked, and results were mixed. Based on the responses provided during turn-and-talk questions, and in some whole-group discussion, some students were not ready for making inferences and drawing conclusions independently. Using scaffolding in the whole group, they were able to tackle these questions and make sense of the text at a deeper level.

#### **4.2.2 Connecting to prior knowledge**

Connecting to prior knowledge was another strategy that students used frequently during all read-alouds. Students contributed prior factual knowledge, made personal connections, or told

stories that they felt related to the text. These three subcodes were further classified as on-topic, off-topic, or misinformation.

Most often students contributed prior factual knowledge, which was on topic. Examples of misinformation occurred most frequently on the first day of the unit, where ten instances occurred. When these statements were made, the teacher tried to provide immediate feedback to correct the misunderstanding, as in the following example.

**William:** Some bats have fangs and they turn into Draculas.

**Investigator:** That's not a real bat. That's only in movies. We are learning about real bats.

On subsequent days there were no more than two instances of misinformation, indicating that students did acquire and apply concepts from the unit. Even on the first day though, some students were able to contribute prior knowledge that was on-topic. The following exchange occurred during the introductory discussion of the text and setting of goals.

**William:** Bats live in caves.

**Investigator:** One of the things we said they need is shelter, and that's an example. So we will find out some other places that they will live too.

**William:** And high trees.

**Investigator:** Sounds like you know a lot about where bats live. Good.

Sometimes students offered information to the class that was only tangentially related to the text or did not relate to the part of the text that was being read. These contributions were coded as off-task. For example, on the first day we read that vampire bats drink blood from animals including chickens. Jacob then added, "Chickens can um, run without their heads for only three minutes." On the sixth day, when we were reading about and discussing the benefits of fruit bats, Holden stated, "Bats um can be nocturnal. And they can be nocturnal hanging in

the caves with their claws and hanging in trees.” Although both boys offered information that they knew to be true, it did not aid in comprehension, as it was not relevant to what was being read at the time.

Students also reported personal connections to the text. Again, some were on-topic and helped students to construct meaning. For example, Kathryn pointed to a bat craft that was hanging on the wall and said, “There is a bat there, and we made it from the socks.” Since all students had made their own bat, this was an opportunity to activate prior knowledge about bat structures that were included in the project and relate them to the text goal of understanding different structures have specific functions for animals. Other comments may have only been useful for activating prior knowledge in the student commenting, such as when James stated, “Whenever I go to the zoo I see bats there.”

When we read the book *Bats: Nocturnal Flyers*, James commented that this sister’s name is Rebecca, like the author, and William added that his sister’s friend was also named Rebecca. Although it is natural for the students to respond to a name that has a personal connection for them, it did not help them to comprehend the text.

Beyond a quick personal connection, some students shared stories that they felt related to the text. When we read that bats eat harmful insects we talked about what “*Many of these insects destroy crops*” meant. Sharon told a story about an animal eating her mother’s snap pea plants. Although there was a connection to the idea of crops being destroyed and she was very enthusiastic in while relating the story, it was clear that insects were not the ones eating the plants. Furthermore, the time spent on speculating what might be eating the plants may have been better spent on the actual text. Shorter stories like the following told by Anthony were

more common. The follow-up question was used to focus the story on the concept of bats being nocturnal, which is what was being discussed at the time.

**Anthony:** I find uh, I saw a bat. I was outside with my brother and my grandma and we saw a bat.

**Investigator:** OK, was it nighttime? Was it getting dark?

**Anthony :** It was kinda dark.

The sharing of prior knowledge was an important way for students to comprehend the text. Sharing their understanding was a way to alert the investigator to misconceptions that needed to be clarified. Personal connections made the text more meaningful. As the unit progressed, prior knowledge that was shared tended to be more accurate and relevant. However, students did also share irrelevant or tangential information that did not aid in a deeper understanding of the text. At this young age, these students needed to be guided to understand how their prior knowledge could help them understand new information as well as how it could interfere with their learning.

#### **4.2.3 Responding to classmates**

A third way that students engaged in learning from the text was to respond to their classmates. They did this by agreeing, disagreeing, extending their classmate's comment, or by answering a question. The exchanges between the students demonstrate that the read-aloud experience was not a passive one of receiving information from the teacher, but rather an active process of constructing meaning within a community of learners.

Sometimes students spoke to express their agreement with a classmate. On the first day, William stated "Or you could find them in caves that are really dark" and Dominic agreed

“That’s where they live.” Often this agreement took the form of just repeating the other student’s comment.

Students also felt comfortable expressing disagreement with their classmates. On the second day of the unit we were discussing animals’ need for shelter. The following exchange occurred.

**Brian:** caves are like good and safe

**Investigator:** good and safe, ok

**Sharon:** but maybe bears are in those caves

Sharon’s concern that a cave might not in fact be safe led to a discussion about how bats find safe shelter and which animals are or are not a threat to bats.

On day 4 when discussing the vocabulary word unique, the investigator wanted to emphasize that bats are unique because they are the only *mammals* that fly. The following exchange shows how Jacob helped Brian to understand this idea.

**Investigator:** Other mammals walk or swim. Only a bat is a mammal that can fly

**Brian:** But birds can fly too.

**Jacob:** But they’re not mammals.

More often than merely agreeing or disagreeing with what their classmate said, students tended to extend the idea that was shared. The following from the day 8 read-aloud shows how William wants to emphasize that the size of the tree is important for a bat’s shelter.

**Investigator:** Brian how do they stay safe?

**Brian:** in a tree. The top of a tree

**Investigator:** It could be a tree

**William:** And um, and um, um, not small trees, really, really, big trees

The following day when we were discussing possible locations for bats to find shelter, Emma thought that a garden would be a good place, but was having trouble finishing her thought. Sharon offered that perhaps she meant a garden shed, and Emma agreed that that was what she was thinking.

A final way that students responded to their classmates was by answering each other's questions. Sometimes these answers were correct, and sometimes incorrect, so as with teacher-generated questions, misconceptions needed to be clarified. The following examples illustrate these two situations.

From Day 7:

**Investigator:** On this page I see two more bold words. Migrate and hibernate.

**Sharon:** What's hibernate?

**James:** um, hibernate means that they sleep all the winter and they're awake in the spring and summer.

From Day 4:

**Anthony:** What is that, what is that um, what is that green stuff that bat is eating?

**Investigator:** That's an insect.

**Brian:** That's a snake.

**Investigator:** Not a snake:

**Aiden S.:** A worm

**Investigator:** This is a very close up picture, so it looks bigger. In real life it would be small like this. An insect, Ok?

Turn-and-talk questions also offered a natural time for students to respond to one another. Rather than just answering the teacher's question for the group, two students worked together to make meaning. In these responses, they were also observed to agree with one another, such as when students responded, "I was going to say the same thing" or "yeah, they do." They showed

an ability to take turns and even ask for feedback rather than just focusing on their own answers. For example, when discussing what is dangerous for a bat a student responded, “I think humans are harmful for bats. What do you think?” At another point, a student said, “you go first” and listened to his partner before responding. Students also disagreed with each other. In the following exchange, two students are discussing what is dangerous for a bat.

**S1:** Bats are scared of humans because they’re bigger than them.

**S2:** No, they’re just the biggest threat.

**S1:** But they’re bigger than them right?

**S2:** Yeah

In this exchange, it’s clear that the second student understood that the biggest threat to a bat didn’t have to do with physical size, but about how dangerous something was. The first student continued to focus on physical size, but this does illustrate an example of disagreement when one student attempted to help another student gain deeper understanding. As in the large group discussion, they also extended each other’s ideas. The following examples show how students agree with their partner but then add more to extend the thinking or deepen the understanding. The following is in response to the question “Why are senses of sight and smell important to these bats?”

**S1:** to smell food

**S2:** oh, I know, maybe so they can smell animals and other fruit and stuff.

In response to the question “What might happen if there were no microbats around?”

**S1:** there would be so many bugs everywhere

**S2:** bugs spread diseases and people get sick

By responding to their classmates, students were able to construct meaning and demonstrate comprehension. In agreeing, disagreeing, extending ideas, and answering questions students took an active role in the read-aloud event.

#### **4.2.4 Using visual aids**

The use of visual aids was another strategy employed by students to comprehend the text. Most often they used photographs to support their understanding and made spontaneous comments about the photographs. Charts and diagrams also appeared in the text and the investigator drew attention to these text features during the read-alouds.

Students used the photographs in the text to support their understanding of the unit concepts. For example, students identified fish as something eaten by some bats and caves as a place for shelter by using photographs. During second and third readings of texts, students identified specific types of bats such as the lesser bulldog bat and vampire bat when their pictures appeared. Holden often commented that bats were nocturnal and when asked how he knew that, he explained that they were flying or eating at night in the photograph. After each reading of one of the primary text, the four students who were interviewed were asked if the author had done anything to make it easier to learn about bats. Four out of the five times that he was interviewed, Jacob reported that the inclusion of photographs was helpful. Kathryn also reported this three out of the six times she was asked.

Sometimes the visual aids needed to be explained to avoid misunderstanding their purpose or the content of the text. The following exchange illustrates this.

**Brian:** They're could go in cars

**Investigator:** Ok, I think Brian noticed the picture of the car, so let's see what the author did. The author wants to help you understand how big bats are. They are not telling us that bats go in a car, but can you see how big the car is? [students: yeah] And then can you see the bat that is on top of the car spreading out his wings? [students: yeah]

**Text:** The flying fox of Indonesia is the world's biggest bat. It has six-foot wide wingspan. That's wider than a car!

There was still some misunderstanding about the purpose of the picture, as William then commented, "Maybe the maybe the bat flied and the car was driving." The investigator then clarified that the picture was there only to show the relative size of the bat and pointed out the bumblebee bat, which was depicted near the side mirror of the car to show how small it is. During the first post-reading interview, when asked if the author did anything to make it easier to learn about bats, both Kathryn and Jacob reported the use of this diagram. Kathryn also noted that this was helpful after the second reading. The investigator also guided students through using the diagram of the bat to show bat features and the diagram of echolocation to explain that process.

Using visual aids was an important comprehension strategy for students. Photographs were used most often and information from the captions became knowledge that students shared in subsequent readings. Because diagrams are common in informational texts, the investigator modeled their use for students during initial readings of the primary texts. They were asked to explain them during the repeated readings, with this scaffolding designed to focus their attention on how text features such as diagrams can aid in comprehension.

#### 4.2.5 Asking questions

A fifth action taken by the students during the read-aloud to engage in learning from the text was to ask questions. Students primarily asked for definitions of words in the text. They also wanted clarification on concepts presented in the text or what was presented in a photograph. The following exchange demonstrates how asking questions was encouraged as a strategy for students to comprehend text.

**Text:** Bats are rarely seen during the day. That is because they are nocturnal.

**James:** What does rarely mean?

**Investigator:** Oh, good question. I love how James asked what a word means, because if you don't know what a word means when you're reading, a good idea is to ask the teacher what it means. Rarely means hardly ever. So, they are hardly ever seen during the day. They are rarely seen during the day. It hardly ever happens. Nocturnal means awake during the night.

On several occasions, Sharon asked for a word to be defined. When the response was given she then demonstrated her understanding by applying the word to a new situation. For example, when she asked what enemies meant, she told a story about a student having enemies, but clarified that it was just pretend. She asked for the word "prey" to be defined, and later in the read-aloud when the text stated that bats use echolocation to find food, she added "To find prey" showing that she remembered the definition.

Through questioning, students were able to express confusion and have words, concepts, and images clarified for them. They were empowered to lead the discussion in a certain direction so that they could construct meaning from the text.

#### 4.2.6 Responding chorally

Students also engaged in responding chorally as an activity to comprehend the text. Some choral responses were spontaneous responses to the text, such as saying “awww” when the picture of a bat pup was first shown or gasping the first time vampire bats were mentioned in the text. However, most were investigator initiated. Choral responses were one way to rehearse vocabulary words. For example at the end of the first reading, the vocabulary words were reviewed in the following way.

**Investigator:** Our first word we learned means being active at night and sleeping during the day. Who remembers that one?

**Emma:** Nocturnal

**Investigator:** Good, everyone say nocturnal

**Students:** nocturnal

Likewise, big ideas of the unit were reviewed through choral response. Understanding these vocabulary words and big ideas were essential for truly comprehending the text. Therefore, choral responses allowed all students to participate and stay engaged with the text. The following exchange is from day 3 of the unit.

**Investigator:** OK, today we remembered that there are four things all animals need. All animals need (pantomime taking a big breath)

**Students:** air

**Investigator:** And all animals need (pantomime taking a bite with a fork)

**Students:** food

**Investigator:** And all animals need (pantomime taking a drink from a glass)

**Students:** Water

**Investigator:** And all animals need (pantomime a roof over head)

**Students:** Shelter

Rather than raising their hands or being called on to answer some questions, students also responded chorally. For example when asked what a bat was eating in a picture, the students all responded that it was a fish.

Responding chorally was an activity that allowed all students to become active in the read-aloud process. Even reluctant speakers could participate because they were not asked to speak alone in front of their classmates. It allowed for repetition of vocabulary words and big ideas to aid retention.

#### **4.2.7 Acting out the text**

Students were also observed acting out the text. By using their bodies to demonstrate ideas from the text, students showed another way to engage with and learn from the text. Some of these actions were spontaneous responses from the students, while others were directed by the investigator to give the students a kinesthetic way to interact with the text

On the first day, William flapped his arms to demonstrate flying when he shared his prior knowledge that bats have wings. At times throughout the unit other students did this when the text was about flying or if they were answering a question in which flying was involved. During that first read aloud, several students also made squeaking noises when the text stated, “Bats produce very high sounds.” During turn-and talk discussions, students sometimes acted out their responses such as flapping wings when discussing the purpose of lighter bones or to demonstrate migration. They also pantomimed licking to show how a vampire bat eats blood and made squeaking sounds when discussing echolocation.

The investigator also initiated several instances for students to act out the text. During the second day, students were encouraged to make claws and show their fangs when discussing

how these structures functioned for bats in catching prey. On the third day, two students acted out the concept of echolocation, with one student playing the part of the bat, and another the part of the bug. Although a diagram was provided in the text, some students still struggled with the concept. After the demonstration by the students, the class reported understanding the concept better. In addition, Kathryn reported during the post-reading interview that the demonstration of echolocation helped her to understand the book better.

During the second week of the unit, students were asked to pantomime hibernation and migration. During the first reading, one student was asked to demonstrate migration for the class by “flying” from the back of the room to the front. We discussed why he was traveling. On subsequent readings, all students were asked to pantomime flying with the word migration, and sleeping with the word hibernation.

By acting out the text, students were able to connect with the text in another way. Because their spontaneous responses such as flapping their arms or making squeaking sounds matched the text, it indicates comprehension. They also reported that acting out concepts such as echolocation helped them to understand them better.

#### **4.2.8 Making predictions**

The final action students took that was coded for engaging in learning and comprehending the text was making predictions. This did not occur in all read-aloud sessions, and was observed almost exclusively during initial rather than repeated readings of texts. Students used both photographs and text to make predictions. For example, on the first day of the unit, students saw a picture of a bat flying out of a cave, which led to a student making the following prediction.

**Text:** Night has fallen. It is time for this little bat to spread its wings and soar away.

**Brian:** I think he's going to get food.

This prediction fit with our earlier discussion that all animals including bats need food to live. Likewise the following prediction made during the second week of the unit fits with what we had already learned about bats being beneficial.

**Text:** Pollen – tiny grains from flowering plants that are needed to make new plants

**Investigator:** We need to find out how pollen gets around to different flowers. Let's see

**Sharon:** Bats fly them around.

Although making predictions did not occur frequently, some students did use this strategy to make meaning from the text. By using clues from pictures and thinking about what we had already read, they showed an ability to make connections beyond the literal text.

#### **4.2.9 Summary**

The students in this class engaged with the text in a variety of ways. During the read-aloud events, they were observed answering teacher questions, connecting to prior knowledge, responding to classmates, using visual aids, asking questions, responding chorally, acting out the text, and making predictions. These actions allowed them to access the content of the text and construct meaning together as a community of learners.

### 4.3 RESEARCH QUESTION 2

*How do students in this class demonstrate acquisition and retention of the concepts presented in an informational text that is shared through an interactive read-aloud?*

Data sources to address this question include pre-test and post-test data from multiple-choice assessments and interview transcripts. Only the post-test from the first reading of each week was considered. Scores from subsequent post-tests were considered in relation to research question 3 regarding the effects of rereading texts. Mean scores of the multiple choice assessments were analyzed with a paired samples t-test. Interview responses were scored using a rubric. Scores from both measures indicate that students did learn concepts presented in the text following an interactive read-aloud.

#### 4.3.1 Pre-test

The pre-test was scored to determine the level of background knowledge about unit concepts for individuals and the group as a whole. The topic was considered familiar for students scoring at least 70% on the pre-test. There were three students whose scores indicated familiarity with the unit concepts for week 1, although no student scored higher than 70%. As a group, the students scored 45.2% for week one concepts and 38% for week two concepts. The highest score for week two was 60%, which two students received. Relative familiarity with the topic can also be used as a variable when analyzing comprehension scores. Comprehension difficulties can be evaluated in relation to knowledge base (Leslie & Caldwell, 2011). The pre-test scores indicate that the information to be taught in this unit was relatively unfamiliar to this group of students.

### **4.3.2 Whole group multiple-choice assessment**

After one interactive read-aloud of the primary text, students took a ten point multiple-choice assessment. During week one, all twenty-five students were present for the first read-aloud. The average score increased from 43.3% to 63.6%. In addition, twelve students scored at least 70%, compared with only three on the pre-test. For the second week, twenty-four students were present for the first read-aloud. The average score increased from 38.8% to 70.4%. Seventeen students scored at least 70% with two students answering all questions correctly. During the second week, students did have the benefit of building on the knowledge they obtained in the first week. This may have led to increased comprehension of the second week primary text. However, the unit concepts and vocabulary that were assessed were not introduced in the first week.

A paired-samples t-test was conducted to compare the average test score on the pre-test and post-test for both weeks of the unit. For week one, there was a significant difference in the scores for pretest ( $M = 4.52$ ,  $SD = 2.9$ ) and post-test ( $M = 6.36$ ,  $SD = 2.74$ ) conditions ( $t(25) = -5.12$ ,  $p = 0.00003$ ). Likewise in week two, there was a significant difference in the scores for pretest ( $M = 3.88$ ,  $SD = 2.02$ ) and post-test ( $M = 7.04$ ,  $SD = 4.39$ ) conditions ( $t(24) = -8.46$ ,  $p = 0.00000002$ ). These results show that students were able to demonstrate acquisition and retention of concepts by answering multiple-choice questions more accurately after the reading.

### **4.3.3 Interviews**

Interviews transcripts were scored based on a rubric to determine level of mastery of key concepts. To represent the range of academic abilities present in the classroom, one student performing well below grade level (Anthony), one student performing slightly below grade level

(Dominic), one student performing on grade level (Jacob), and one student performing above grade level (Kathryn) were chosen as interview subjects. In general, scores after the first reading of the primary text showed a considerable increase from the interviews before the unit started.

In the first week, Dominic's score increased from zero to four points. His pre-unit answers showed that he had some prior knowledge of bats, but was unable to apply it to comprehension questions. For example, he knew that bats had wings and could fly, but did not know that this made them unique as a mammal. He also held some misconceptions about bats. When asked about what bats need, Dominic replied "shade". He went on to explain his answer by saying, "cuz when it's sun? Some vampire when I watched a video a vampire was in the sunshine and it popped out the sun and it shined onto the boss and it was a vampire". After one reading of the primary text he was still unable to answer many comprehension questions. However, he did know that bats need shelter to survive. He knew that bats could eat fruits such as bananas. He answered that mammals drink their mother's milk. He also knew that during echolocation bats made squeaking sounds. Although Dominic had not mastered all of the unit concepts, he was beginning to show an understanding of some of the important vocabulary words and big ideas. He did express some frustration with trying to comprehend the text. When asked if there was anything we did as a class to make the book easier to understand, he answered, "No, I keep not understanding." In the second week, Dominic showed a minimal improvement from his pre-unit answers to the interview after the first reading. When asked about what was dangerous for bats, he correctly answered people, but still listed sun as a danger.

Jacob demonstrated more acquisition and retention of concepts from the read-aloud than Dominic. After the first reading of *Bats* by the Editors of Time for Kids, his score improved from four to nine. The pre-unit score of four indicates that Jacob did have some relevant prior

knowledge prior to the read-aloud. For example, he knew that bats eat bugs and flew at night to get those bugs. After the first reading he was also able to correctly explain the vocabulary words of nocturnal, unique, and mammal. Some of his answers showed a more sophisticated understanding of the concepts, even if they did not receive more points. The following exchange about echolocation took place prior to the unit.

**Investigator:** What can you tell me about echolocation?

**Jacob:** Echolocation is when they use they um these I think they squawk or something.

**Investigator:** OK, can you tell me any more?

**Jacob:** Um, and also um if they lost their herd they would just um squawk again until they came.

In contrast, after the first reading he answered in the following way.

**Investigator:** What can you tell me about echolocation?

**Jacob:** Cuz he squeaks like this *\*squeak\**

**Investigator:** And then what?

**Jacob:** Then the bugs come and the bats eat them.

From this exchange, it's clear that Jacob has learned that echolocation helps bats to get their food rather than find their "herd." However, both answers earned just one point because he mentioned the bats making a high-pitched noise. He did not include the idea of an echo bouncing back to help the bat locate the bugs. Jacob was also able to consider approaches to comprehension and stated that the turn-and-talk strategy made the book easier to understand. In week two, Jacob's score increased from two prior to the unit to five after one reading. Although there wasn't as large of an increase, Jacob did demonstrate an understanding of things that were dangerous for bats. He knew that people and predators were dangerous and that bats could lose

their homes. Although the gain was smaller, Jacob clearly comprehended at least parts of the text. He again noted the helpfulness of turn-and-talk.

Like Jacob, Kathryn's scores showed that she was able to learn from the text, with her week one score increasing from four prior to the unit to eight after one reading. In particular, she was able to define nocturnal, give characteristics of a mammal, and provide examples of how bats meet their needs, which she could not do prior to the unit. She was also able to give a partial explanation of echolocation. Like Jacob, even when she did not receive more points, she showed greater understanding. One important concept in this unit is that all animals have the same basic needs. Prior to the unit Kathryn already knew that animals need food, air, and water to survive. After one reading, she also knew that animals require shelter, but she had already received the maximum number of points for the question by supplying three responses prior to the unit. In the second week, she showed a similar gain, with her score increasing from two prior to the unit to six after one reading. Like Jacob, Kathryn expressed that turn-and-talk helped her to understand the text.

Unlike the other three students, Anthony's responses during the interview did not indicate that he learned anything during the read-aloud events, or that he was unable to articulate what he had learned. For week one concepts, Anthony scored two prior to the unit and one after the first reading. For week two concepts, he scored zero both before the unit and after one reading. He most often simply answered, "I don't know." One response that he gave indicates that he may not have understood the question itself.

**Investigator:** What things does a bat need in order to live?

**Anthony:** ummmm in a tunnel?

**Investigator:** OK, **what** does it need to live?

**Anthony:** Ummm, in a tree

Although he recalled that tunnels and trees are places that bats can live, he was answering the question “Where do bats live”, instead of the actual question asked, which was “What do bats need?” After one reading of the text, the only other question that Anthony attempted to answer was “What do bats eat?” after the investigator supplied that food was one of the bats’ needs. He said that bats eat meat, which while true was only briefly mentioned in the text in contrast to other more common foods. This was a piece of prior knowledge that Anthony brought to the unit and mentioned frequently throughout the unit. The open-ended format of the interview questions may have been difficult for Anthony to understand. He did slightly better on the multiple-choice questions, scoring two on the pre-test for week one and four on the first post-test. In week two, both his pre-test and first post-test scores were five. Anthony did appear to be listening during the read-aloud, participated in the turn-and-talk strategy, and contributed to the discussion. He spoke five times during the first reading of week two, indicating that he was paying attention to the text and the discussion. Despite this, he was unable to demonstrate retention of the vocabulary and concepts in the text. This indicates that while the interactive read-aloud is an appropriate strategy for developing comprehension skills in kindergarten students, it is not adequate for all students.

#### **4.3.4 Summary**

Based on the scores from the pre-test and post-test multiple-choice assessments and interview rubric, the informational text read-aloud promoted acquisition and retention of the concepts presented in the text. As a whole, the class was able to answer significantly more comprehension questions correctly after one reading of the primary text. Three of the four students interviewed also made gains in their comprehension and were able to more fully explain concepts from the

unit. Two of the students cited the turn-and-talk strategy as beneficial to their comprehension. These students are also the two performing at or above grade level in the regular ELA class. This indicates that students who perform better on other reading tasks in the classroom may show more growth from the interactive read-aloud and acquire and retain more information from the unit.

#### **4.4 RESEARCH QUESTION 3**

*In what ways do repeated readings of an informational text influence acquisition and retention of concepts presented in the text for this class of kindergarten students?*

To determine the effect of repeated readings of a text, I considered data from pre-test and post-test assessments after each of the three readings of the primary texts. Only scores from students who were present for all three readings were considered in this analysis. For both weeks, twenty-one students were included. In addition, interview transcripts were scored based on a rubric to determine level of mastery of key concepts. Mean scores of the multiple choice assessments were analyzed with a paired samples t-test. Interview responses were scored using a rubric. Scores from both measures indicate that acquisition and retention of concepts presented in the text improved with repeated readings of the text.

#### 4.4.1 Whole group multiple choice assessment

As stated in the previous section, student scores on the first post-test were statistically significant compared to the pre-test for both weeks. Scores continued to rise after each reading of the text. For the first week, the average scores of the twenty-one students included increased from 43.3% on the pre-test to 62.9% on the first post-test, 67.1% on the second post-test, and 81.4% on the third post-test. On the third post-test, seventeen of the students scored at least 70%, with six answering all questions correctly. For the second week, the average scores of the twenty-one students included increased from 36.7% on the pre-test to 70.0% on the first post-test, 72.9% on the second post-test, and 86.7% on the third post-test. Nineteen students scored over 70% on the third-post-test, with eight answering all questions correctly.

A paired-samples t-test was conducted to compare the average test score on the first post-test and second post-test for both weeks of the unit. In addition, a paired-samples t-test was conducted to compare the average test score on the second post-test and third post-test for both weeks of the unit.

For week one, there was not a significant difference in the scores for the first post-test ( $M = 6.29$ ,  $SD = 2.91$ ) and second post-test ( $M = 6.71$ ,  $SD = 4.81$ ) conditions ( $t(21) = -1$ ,  $p = 0.329$ ). However, there was a significant difference in the scores for the second post-test ( $M = 6.71$ ,  $SD = 4.81$ ) and the third post-test ( $M = 8.14$ ,  $SD = 3.23$ ) conditions ( $t(21) = -4.56$ ,  $p = 0.00019$ ). Likewise in week two, there was not a significant difference in the scores for the first post-test ( $M = 7.0$ ,  $SD = 4.6$ ) and second post-test ( $M = 7.29$ ,  $SD = 2.51$ ) conditions ( $t(21) = -0.78$ ,  $p = 0.444$ ). Again, there was a significant difference between the second post-test ( $M = 7.29$ ,  $SD = 2.51$ ) and the third post-test ( $M = 8.67$ ,  $SD = 2.83$ ) conditions ( $t(21) = -4.22$ ,  $p = .00042$ ). These results suggest that repeated readings of the primary text did improve comprehension of the text.

By reading the text a third time, comprehension scores improved significantly and the number of students reaching mastery of the unit content also increased.

#### 4.4.2 Interviews

Prior to the unit, and after each reading of a primary text, four students were interviewed and asked questions about unit vocabulary and concepts. To represent the range of academic abilities present in the classroom, one student performing well below grade level (Anthony), one student performing below grade level (Dominic), one student performing on grade level (Jacob), and one student performing above grade level (Kathryn) were chosen as interview subjects. Interviews transcripts were scored based on a rubric to determine level of mastery of key concepts. The two students performing at or above grade level showed clear improvement of understanding with each rereading. Dominic was inconsistent, while Anthony showed no improvement throughout the unit. Table 5 shows the scores from the interview assessments.

**Table 5.** Scores from interview assessments

Name	Prior to Unit	After 1 <sup>st</sup> Reading	After 2 <sup>nd</sup> Reading	After 3 <sup>rd</sup> Reading
Week 1: <i>Bats</i> by the Editors of Time for Kids; maximum points = 13				
Anthony	2	1	1	2
Dominic	0	4	5	7
Jacob	4	9	12	absent
Kathryn	4	8	11	13
Week 2: <i>Bats: Hunters of the Night</i> by Elaine Landau; maximum points = 12				
Anthony	0	0	absent	0

**Table 5** continued

Dominic	1	2	4	2
Jacob	2	5	6	12
Kathryn	2	6	10	11

Dominic's answers during his interviews showed that repeated readings did allow him to acquire more information, but retention of these concepts was inconsistent. For example, his overall score increased after each reading during week one. However, although he could fully explain what nocturnal meant after the second reading, he answered, "I don't know" after the third. He knew that we had discussed babies drinking their mother's milk, but he applied that information to the vocabulary word unique, and inconsistently as a characteristic of a mammal. He stated this a characteristic of a mammal after the first and third readings, but not after the second. The only concept that seemed to develop more fully over the course of the repeated readings was survival needs. Prior to the unit, he could not name anything that an animal needs to survive. After the first and second reading, he could recall shelter as a need. After the third reading, he recalled food and water as well as shelter. During week two, Dominic showed similar inconsistencies. After two readings he could explain the word beneficial, but after the third reading he said that it meant they travel. Even after three readings, he could not explain important concepts such as how bats are helpful or how people could help bats. Again, he did show consistent improvement with one concept. When asked what are some things that are dangerous for bats, Dominic came into the unit with misinformation that sun and bees are dangerous. After the first and second readings, he identified people as a danger, and by the third reading he identified people and snakes as dangerous, without including any misinformation such as the sun. During this final interview, Dominic also asked to look back in the book.

Although he was not given points for answering the questions after looking back, he did employ a strategy to get the information. For four questions, Dominic asked to look back in the book. I reread the page with the appropriate information needed to answer the question, and he correctly answered. Asking to look back in the text shows that Dominic was thinking about strategies to help him understand the text. During the interviews, he also stated that the turn-and-talk strategy and shortening the amount of text read at one time helped him to understand the book better. He had positive feelings toward rereading the text stating at times that he was “happy, so I can learn more” and felt “good, so I can be a good listener” when asked about hearing the text a second or third time.

Jacob and Kathryn both demonstrated improved comprehension after each reading of the text. They were able to retain the information that they learned after one reading and add to it after the second and third readings. They showed a similar development of concepts. Prior to the unit they were not able to explain the vocabulary words, did not know characteristics of a mammal, and knew only some of the needs of animals. After one reading, they both could explain the word nocturnal. After two readings they were also able to explain the word unique and name all four needs of animals and give multiple examples of food and shelter for bats. After the first and second reading, both also could identify hair or fur as a characteristic of mammals. After the third reading Kathryn also noted drinking mother’s milk as a characteristic, while Jacob was absent. Kathryn was also able to show a deepening of her understanding of the concept of echolocation after multiple readings. Prior to the unit she had no knowledge of echolocation. After one reading, she stated that it helps the bat find food, and after two readings she explained that, “If it’s close it will make loud in its ears. If it’s far it will make quiet.” After a third reading, she was able to give this more complete description, “The bat makes a squeaking

sound and then it bounces off something and then it, it um. Then it comes back to its ears. If it's high, if it's loud that means it's close and if it's low that means it's far away." Some of this comprehension success may be attributed to the use of metacognitive strategies. Both students shared during several interviews that the turn-and-talk strategy helped them to understand the book better. Kathryn also stated that reading the book more than once helped her to understand better. When asked how they felt about reading the books a second or third time, both gave positive feedback. Kathryn said that she learned more and with a third reading, "It made me remember even more." Jacob was more motivated by his interest in the subject, as he stated that rereading the books made him feel, "good, because I really liked the book."

When considering the results of the multiple-choice assessments, Anthony showed some inconsistencies, but did improve his comprehension score with repeated readings. In week one, his pre-test score was 20%. After one reading he improved to 40%, after two readings scored just 10%, and after the third scored 60%. In week two, his pre-test score was 50%. This remained the same after one reading. He was absent for one day, and then for his second hearing of the text, which was the third reading for the class, he scored 80%. He appeared engaged in the read-aloud by asking questions and elaborating on classmate's responses. He did cling to some prior knowledge that was not supported by the text. For example, when talking about dangers for bats, the text discussed humans as the biggest threat, other predators, and the cold, which leads to a lack of a food supply. Anthony however continued to say "fire" when asked what was dangerous for bats. He also did not seem to understand why cutting down trees where bats live was dangerous for them. He responded, "Then then some sticks will go on his back." To reiterate the concept that it was losing its home that was dangerous, the investigator replied, "No, it's because he won't have shelter. All animals need shelter. They need somewhere to live."

Yet, during the interview, when asked about what could be dangerous for bats, he answered “sticks” referring to his incorrect inference during the discussion rather than information supplied by the text. His inability to correctly answer any questions during the interview indicate that the open-ended format of these questions may have been difficult for Anthony to understand and did not allow him to access any information that he had learned from the text. The multiple-choice questions were all accompanied by pictures, which may have aided in Anthony’s recall. The reason for the lack of improvement in answering any of the interview questions remains unclear. Anthony was the only student of the four who was unable to tell anything that the author did to make the book easier to understand or anything that we did as a class to make it easier. As the youngest of the four students, his age may be a factor. There also may be some underlying language processing issues, as he performs below grade-level in his regular ELA class.

#### **4.4.3 Summary**

The results of the multiple-choice assessments and individual interviews suggest that repeated readings of an informational text improve acquisition and retention of concepts presented in the text. Average comprehension scores increased with each reading of the text and more students reached mastery of unit concepts. Interviews also showed a deeper understanding of unit concepts developing with repeated readings. Again, students who typically performed better on reading tasks in the classroom fared better on comprehension tasks.

In any classroom, a single teaching strategy may not be effective for all students. At the beginning of the kindergarten year, this may be particularly true, as some students are being exposed to formal schooling for the first time. It may require more exposure to interactive

discussions surrounding text before some students are able to engage in a way that increases acquisition and retention of concepts and allows them to articulate their learning. Specific strategies may need to be taught to these learners that do not seem to naturally pick up on the language through the modeling and scaffolding that occurs during the interactive read-aloud.

#### **4.5 SUMMARY**

The results of this study suggest that the students in this kindergarten class engage with text during an interactive read-aloud in order to construct meaning from and comprehend the text. They used a variety of strategies to do this including answering teacher questions, connecting to prior knowledge, responding to classmates, using visual aids, asking questions, responding chorally, acting out the text, and making predictions. During the read-aloud sessions, the same seven students took the majority of turns speaking. However, over half of the students contributed something out loud to the group during each reading. The percentage of students contributing tended to increase with each reading, and over three-quarters contributed during the third reading of the primary text in week two. Only three students in the class did not speak up at all during the course of the unit. However, even those three students responded chorally at given times and all students participated in the turn-and-talk strategy. Therefore, the interactive read-aloud involved all students in the class, although to varying degrees.

Through assessments after the readings of the primary text including ten multiple-choice questions for the whole group and individual interviews for four students, it was shown that these students did learn from the text. Comprehension scores increased most dramatically from the

pre-test to the first post-test. Scores continues to increase after a second and third reading of the text, indicating that multiple readings of a text can aid student comprehension.

## **5.0 DISCUSSION**

The purpose of this study was to investigate how teachers can support kindergarteners' comprehension of informational text through the use of repeated read-alouds within a unit. This discussion will expand upon findings of this study and consider their implications specifically to classroom practice and more globally to the field of literacy education.

### **5.1 MAJOR FINDINGS AND LIMITATIONS**

This study investigated an intact kindergarten class of twenty-five students who engaged in a two-week study on the topic of bats that included repeated read-alouds of informational text. Through observation of the read-aloud events, multiple choice assessments, and interviews, data was gathered about the process and products of comprehension for this group. These findings, as presented in the last chapter, suggest interactive read-alouds can be an effective comprehension activity despite the limitations of the present study.

#### **5.1.1 Major findings**

This study resulted in three major findings. First, the students in this kindergarten class utilized a variety of actions to access the text within the sociocultural context of the informational

interactive read-aloud. Second, the students in this classroom were able to demonstrate comprehension of the text after the interactive read-aloud. Finally, repeated readings of the text resulted in increased acquisition and retention of concepts from the text.

Studies show that actively involving students in discussion of the text in order to construct meaning results in better comprehension than merely reading followed by questioning (McKeown & Beck, 2003; Wiseman, 2011). The results of this study support this assertion. Specifically, kindergarteners were able to engage directly with the text individually and construct meaning jointly with the teacher and classmates throughout the read-aloud. Students engaged with the text individually by connecting to prior knowledge, using visual aids, acting out the text, and making predictions. They worked cooperatively with the teacher when answering teacher questions, asking questions, and responding chorally. There were also occasions when the teacher initiated acting out the text or using visual aids. Students also responded to their classmates, showing engagement with the text without teacher mediation. This co-construction between classmates also occurred when turn-and-talk questions were asked. During interviews, students noted that the turn-and-talk strategy helped them to understand the text better.

Comprehension was evident in scores on the multiple-choice assessment and interviews after a single reading of the informational text. A pre-test indicated that the subject matter of the unit was relatively unfamiliar to the students in this class. After one reading of the primary text, scores on a comprehension assessment improved significantly. Likewise, when interviewed, students demonstrated that learning occurred during the read-aloud.

Comprehension improved on multiple choice assessments and interviews with repeated readings of the text. Although there was not a significant difference in scores between the first and second readings of a text, there was a significant difference in scores from the second to the

third. This indicates that reading the text a third time allowed students to understand the text more deeply and remember important unit concepts. When interviewed, only the student performing well below grade level in ELA did not demonstrate acquisition and retention of unit concepts. The other three students showed improvement in comprehension after each reading of the primary text. They gave more complete responses, and were able to identify text features and class strategies that helped them to comprehend the text better. They also all expressed positive opinions toward rereading texts, noting that it helped them to learn more or remember information better.

### **5.1.2 Limitations**

This study has a number of limitations. One major limitation was the sample size. One intact classroom of twenty-five students participated. These twenty-five students may not be representative of other kindergarten classrooms. If these read-alouds were conducted with another class, other results may have been found. One component of the RAND Reading Study Group's comprehension model is the student. For the students in this study, the topic of bats was of high interest, but prior knowledge was limited. If these factors were different, both process and products of comprehension that were observed could be different.

Another limitation of this study was the use of multiple-choice questions for assessing comprehension. Other methods may have given a more complete picture of the learning that occurred. For example, all students in the class could have been questioned with the interview protocol. This would have allowed for open ended responses to eliminate guessing and allowed for students to expand upon answers. Follow up queries could have illuminated understandings and misconceptions. The time it would take to talk to all of the students made this method

impractical. Demonstrating comprehension through post-reading activities was also considered. Students did complete activities that included writing and drawing after some of the reading sessions. The quality of the work on these activities was influenced by more than comprehension of the text. Factors such as language skills related to following direction, attention to task, and fine motor skill development also played a role. Therefore, using the time and resources available, assessing through multiple-choice questions was the most feasible.

Finally, using interactive read-alouds as the only instructional strategy was a limitation of this study. Although this study provided an opportunity for a close look at the nature, implementation, and impact of interactive read-alouds, it did not offer an opportunity to compare this strategy with other types of pedagogy. While comprehension did occur, and did increase with repeated readings of the informational text, it cannot be determined if another strategy would have been more effective.

## **5.2 IMPLICATIONS**

The results of this study have implications for classroom practice and pedagogy. They also suggest lines of inquiry to further study practices of comprehension instruction.

### **5.2.1 Classroom Practice**

Read-alouds are common practice in kindergarten classrooms. The selection of texts for these read-alouds has historically skewed towards narrative texts (Duke, 2000; Yopp & Yopp, 2006). The structure of the read-aloud event is another factor in comprehension (Brabham & Lynch-

Brown, 2002; Hofman, 2011; Varelas & Pappas, 2006). The Initiate, Respond, Evaluate (IRE) approach to a read-aloud is a traditional and frequently implemented strategy that puts the control of the text in the hands of the teacher. On the other hand, an interactive read-aloud invites the students to take part in constructing meaning from the text. The teacher and the students together engage in conversation to understand the text. In this study, students utilized a variety of actions to make meaning from the informational text. In other words, when given the opportunity, kindergarten students take an active role in constructing meaning from the text. They draw upon their prior knowledge and engage with the teacher and other students to integrate the new concepts into their understandings.

Considering this study as well as prior research on read-alouds and the use of informational texts with young students, engaging in interactive read-alouds of informational text is advisable for kindergarten teachers. This activity allows students to acquire knowledge that will be beneficial in future content area studies. It allows students to encounter and grapple with complex text that they are unable to read independently. Repeated readings of an informational text has also been shown to be beneficial. By incorporating repeated readings into their practice, teachers can help students develop comprehension skills. These repeated readings also allow students to delve into a subject in order to comprehend the information on a deeper level. This practice will benefit students as they engage in close reading of texts in later grades.

Research has demonstrated that interactive read-alouds promote comprehension (Dickenson & Smith, 1994; Hoffman, 2011; Lennox, 2011), but evidence suggests that teachers are not employing this strategy regularly in their practice (McKeown and Beck, 2003). Therefore, training in the design and implementation of interactive read-alouds could benefit new and veteran teachers alike. This study suggests that preservice teachers could benefit from

instruction in text selection, developing questions, and supporting comprehension through interactive discussions when working with young students. Widespread use of this strategy is more likely if it is understood and practiced before teachers enter the workforce. There also seems to be a need for veteran teachers to gain familiarity with this approach. After providing professional development sessions on how to develop and implement an interactive read-aloud with informational text, districts could provide teachers with time to develop units that include this practice. McKeown and Beck (2003) cite the time requirements of developing an interactive read-aloud as a barrier to implementation. Working collaboratively, teachers would be able to more efficiently prepare materials. Providing opportunities for reflection after implementation would promote fidelity of implementation and allow for an iterative cycle of refining and improving the units. If findings from research are to be put into practice in the classrooms, districts must be committed to providing the time and resources needed.

### **5.2.2 Future Lines of inquiry**

During the interactive read-aloud, students were guided to think about certain ideas by the questions posed by the reader. The reader drew attention to text features and visual aids that could aid comprehension. However, there was no direct instruction in using specific comprehension strategies. Are there specific comprehension strategies that should be taught to kindergarten students to aid in comprehension of informational text? How can these strategies be integrated into an interactive read-aloud to allow students to practice their skills?

As the school librarian, I had to step out of my regular schedule to act as reader for this unit. Typically, a classroom teacher would develop and teach a unit that includes repeated read-alouds of informational text. However, a school librarian/ media specialist can play a role in the

literacy instruction of primary age students. Therefore, there are implications from this study related to the practice of school librarians as well as classroom teachers. Interactive read-alouds can be part of the library routine and give students additional repetition of comprehension strategies that are practiced in their classroom. The books that are selected to be read during library class can be related to content area topics that are being studied in the classroom, or have a literary focus such as character traits that is being learned in the classroom. This study then suggests the following questions: What role can school librarians take in the literacy instruction of young students? How can classroom teachers and librarians collaborate to best meet the needs of young students as they engage with informational text?

This study, like Donovan and Smolkin (2002) and Heisey and Kucan (2010) investigated a science unit of study. Informational texts that present ideas from other content areas might present different comprehension challenges. Future inquiries may address the question: How do kindergarten students engage with a social studies text in the context on an interactive read-aloud? How do kindergarten students understand mathematical concepts when presented in an interactive read-aloud?

The ability to comprehend text is crucial. The new Pennsylvania Core Standards has led to a shift in ELA instruction in the primary grades. Students are expected to be equally proficient in comprehending informational and narrative texts. Because of these expectations, comprehension instruction cannot be delayed until the later grades. We need to work to discover the most effective means for not only teaching the content of units, but the comprehension skills that students will need to become successful independent readers in the later grades.

## APPENDIX A

### MULTIPLE CHOICE ASSESSMENT

Questions were presented one at a time on the screen. Questions and answer choices were read aloud. Pictures accompanied answer choices.

Each of the post-tests was given three times. Each time, the same questions were used, but questions were presented in a different order. Answer choices were also presented in a different order.

#### **Bats pre-test**

1. When are nocturnal animals most active?  
a. morning    b. afternoon    c. night
  
2. Which is true about mammals?  
a. Mammals have feathers.    b. Mammals feed their babies milk.  
c. Mammals are cold blooded.

3. How is a bat different from other mammals?
  - a. Bats can fly.
  - b. Bats have furry bodies.
  - c. Bats lay eggs.
  
4. If something is unique, it is
  - a. small
  - b. like other things
  - c. different from other things
  
5. What body parts are most important for echolocation?
  - a. mouth and ears
  - b. wings and claws
  - c. eyes and nose
  
6. What do bats probably eat if they use echolocation?
  - a. fruit
  - b. insects
  - c. blood
  
7. What do bats that eat fruit need?
  - a. good sense of smell
  - b. large ears
  - c. small wings
  
8. Where might a bat find shelter?
  - a. in a nest
  - b. under a bridge
  - c. under a bush
  
9. What should a bat shelter be like?
  - a. quiet and hidden
  - b. small and cold
  - c. big and sunny
  
10. To survive, all animals need air, water, shelter, and \_\_\_\_\_.
  - a. tools
  - b. friends
  - c. food
  
11. What does beneficial mean?
  - a. scary
  - b. small
  - c. helpful

12. When do bats migrate?

- a. when the weather gets cold
- b. in the daytime
- c. when it is time to eat

13. What do bats do when they hibernate?

- a. fly
- b. eat
- c. sleep

14. How can micro bats help people?

- a. They eat harmful insects.
- b. They can roost under bridges
- c. They can migrate.

15. How do fruit bats help plants

- a. They help spread seeds.
- b. They protect plants from predators.
- c. They are nocturnal.

16. How do bats help farmers?

- a. They can eat crops.
- b. They can live in barns.
- c. Their droppings can be fertilizer.

17. How do bats stay safe from predators?

- a. They migrate.
- b. They roost in high places.
- c. They use claws to fight.

18. What happens when people clear the rainforest?

- a. Bats lose their homes.
- b. Bats cannot hibernate.
- c. Bats can't find water.

19. How could people help bats?

- a. make and follow laws to protect bats
- b. pick up bats they find
- c. use insect spray

20. What is the biggest threat to bats?  
a. the sun b. snakes c. people

Post-test A

Text #1: *Bats* by the editors of Time for Kids

1. When are nocturnal animals most active?  
a. morning b. afternoon c. night
  
2. Which is true about mammals?  
a. Mammals have feathers. b. Mammals feed their babies milk. c. Mammals are cold blooded.
  
3. How is a bat different from other mammals?  
a. Bats can fly. b. Bats have furry bodies. c. Bats lay eggs.
  
4. If something is unique, it is  
a. small b. like other things c. different from other things
  
5. What body parts are most important for echolocation?  
a. mouth and ears b. wings and claws c. eyes and nose
  
6. What do bats probably eat if they use echolocation?  
a. fruit b. insects c. blood
  
7. What do bats who eat fruit need?  
a. good sense of smell b. large ears c. small wings

8. Where might a bat find shelter?
  - a. in a nest
  - b. under a bridge
  - c. under a bush
  
9. What should a bat shelter be like?
  - a. quiet and hidden
  - b. cold and quiet
  - c. big and sunny
  
10. To survive, all animals need air, water, shelter, and \_\_\_\_\_.
  - a. tools
  - b. friends
  - c. food

Post-test B

Text #2: *Bats: Hunters of the Night* by Elaine Landau

1. What does beneficial mean?
  - a. scary
  - b. small
  - c. helpful
  
2. When do bats migrate?
  - a. when the weather gets cold
  - b. in the daytime
  - c. when it is time to eat
  
3. What do bats do when they hibernate?
  - a. fly
  - b. eat
  - c. sleep
  
4. How can micro bats help people?
  - a. They eat harmful insects.
  - b. They can roost under bridges
  - c. They can migrate.

5. How do fruit bats help plants
  - a. They help spread seeds.
  - b. They protect plants from predators.
  - c. They are nocturnal.
  
6. How do bats help farmers?
  - a. They can eat crops.
  - b. They can live in barns.
  - c. Their droppings can be fertilizer.
  
7. How do bats stay safe from predators?
  - a. They migrate.
  - b. They roost in high places.
  - c. They use claws to fight.
  
8. What happens when people clear the rainforest?
  - a. Bats lose their homes.
  - b. There are no insects to eat.
  - c. Bats can't find water.
  
9. How could people help bats?
  - a. make and follow laws to protect bats
  - b. pick up bats they find
  - c. use insect spray
  
10. What is the biggest threat to bats?
  - a. the sun
  - b. snakes
  - c. people

## APPENDIX B

### READING ATTITUDE SURVEY

#### Reading Attitude Survey: Directions for Use

This survey is designed to provide a quick indication of student attitudes toward read-alouds and informational text in general and books about bats in particular.

It is adapted from the Elementary Reading Attitude Survey developed by McKenna & Kear (1990). Permission to use the artwork was granted by Pawsinc. on April 13, 2016.

#### Administration

Begin by telling the students that you wish to find out how they feel about listening to books. Emphasize that this is *not* a test and there are no *right* answers.

Distribute the survey and ask them to write their names on the top. Hold up a copy of the survey so that they can see the first page. Point to the Garfield at the far left of the first item. Discuss the mood that Garfield seems to be in (very happy). Then move to the next picture and discuss Garfield's mood (a *little* happy). Repeat this for the next two Garfields (a *little* upset and very upset).

Explain that together you will read some statements about reading and the students should think about their own feelings. They should then circle the picture of Garfield that is closest to their own feelings. (Emphasize they should answer how they feel, not how they think Garfield would feel). Read each item aloud slowly and distinctly two times. Repeat as needed. Ensure that all students are working on the correct item.

## Scoring

To score the survey, count four points for each leftmost *Garfield* (happiest), three for each slightly smiling, two for each mildly upset, and one for each very upset.

A composite score can be obtained, or scores on specific items can be combined to indicate attitude toward specific aspects of read-alouds.

Items 1 - 5: attitude toward listening to books in general

Items 6-8, 11: attitude toward informational text

Item 9: attitude toward multiple readings of a text

Items 10 - 12: attitude toward learning about bats (specific content of unit)

Name \_\_\_\_\_

Please circle the picture that describes how you feel.

1. How do you feel about getting a book for a present?



2. How do you feel about listening to a book at home?



3. How do you feel about listening to different kinds of books?



4. How do you feel about listening to someone read a made-up story?



5. How do you feel about listening to a book in school?



6. How do you feel about listening to a book that gives real information?



7. How do you feel when a teacher asks you questions about what you heard in a book?



8. How do you feel about learning from a book?



9. How do you feel about listening to a book that you have already heard?



10. How do you feel about learning about the bats?



11. How do you feel about listening to a true book about the bats?



12. How do you feel about listening to a made-up story about the bats?



## APPENDIX C

### INTERVIEW PROTOCOL

I interviewed four kindergarten students six to seven times each. The first interview was conducted prior to any instruction to gain a baseline for content knowledge and comprehension strategies. The other interviews were conducted after each of three repeated read-alouds of two target texts for the unit. The interview was intentionally brief to account for short attention spans of kindergarten students.

#### **Interview Questions – pre-test:**

1. What does nocturnal mean?
2. What does unique mean?
3. What does beneficial mean?
4. How are hibernate and migrate alike and different?
5. What things does a bat need in order to live? How does it get those things? (as needed, prompt: how can a bat get food, water, shelter)
6. What makes a bat a mammal? How is it different from other mammals?
7. What can you tell me about echolocation?
8. How are bats helpful to people?
9. What are some things that are dangerous for bats?
10. How could people help bats?
11. Is there anything else that you know about bats?
12. What can you do if you are listening to a book and you don't understand something?

#### **Interview Questions: after first reading of Text #1**

1. What does nocturnal mean?

2. What does unique mean?
3. What things does a bat need in order to live? How does it get those things? (as needed, prompt: how can a bat get food, water, shelter)
4. What makes a bat a mammal? How is it different from other mammals?
5. What can you tell me about echolocation?
6. What else did you learn about bats **from this book**?
7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?

**Interview Questions: after second reading of text #1**

1. What does nocturnal mean?
2. What does unique mean?
3. What things does a bat need in order to live? How does it get those things? (as needed, prompt: how can a bat get food, water, shelter)
4. What makes a bat a mammal? How is it different from other mammals?
5. What can you tell me about echolocation?
6. What else did you learn about bats **from this book**?
7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?
9. We have already read this book once. How did you feel about listening to it again?

**Interview Questions: after third reading of text #1**

1. What does nocturnal mean?
2. What does unique mean?
3. What things does a bat need in order to live? How does it get those things? (as needed, prompt: how can a bat get food, water, shelter)
4. What makes a bat a mammal? How is it different from other mammals?
5. What can you tell me about echolocation?
6. What else did you learn about bats **from this book**?
7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?
9. We have already read this book twice. How did you feel about listening to it again?

**Interview Questions: after first reading of text #2**

1. What does beneficial mean?
2. How are hibernate and migrate alike?
3. How are bats helpful to people?
4. What are some things that are dangerous for bats?
5. How could people help bats?
6. What else did you learn about bats from this book?

7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?

**Interview Questions: after second reading of text #2**

1. What does beneficial mean?
2. How are hibernate and migrate alike?
3. How are bats helpful to people?
4. What are some things that are dangerous for bats?
5. How could people help bats?
6. What else did you learn about bats **from this book**?
7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?
9. We have already read this book once. How did you feel about listening to it again?

**Interview Questions: after third reading of text #2**

1. What does beneficial mean?
2. How are hibernate and migrate alike?
3. How are bats helpful to people?
4. What are some things that are dangerous for bats?
5. How could people help bats?
6. What else did you learn about bats **from this book**?
7. Is there anything the author did to make it easier/ harder to learn about bats?
8. Is there anything we did as a class that made the book easier to understand?
9. We have already read this book twice. How did you feel about listening to it again?

**APPENDIX D**

**INFORMATIONAL TEXT SELECTION CHECKLIST**

Topic:

<b>Title</b>									
Accurate information									
Complex Language									
Accessible language									
Depth of content									
Engaging visuals									
Illustrations related to text									
Info. text features									

Content to cover:

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