A literature review of the think-aloud reading comprehension strategy for teacher use in the classroom

Cindy Kathryn Kauder

University of Northern Iowa

Copyright ©2007 Cindy Kathryn Kauder

Follow this and additional works at: https://scholarworks.uni.edu/grp

Part of the Curriculum and Instruction Commons, and the Language and Literacy Education Commons

Let us know how access to this document benefits you

Recommended Citation
https://scholarworks.uni.edu/grp/985

This Open Access Graduate Research Paper is brought to you for free and open access by the Student Work at UNI ScholarWorks. It has been accepted for inclusion in Graduate Research Papers by an authorized administrator of UNI ScholarWorks. For more information, please contact scholarworks@uni.edu.
A literature review of the think-aloud reading comprehension strategy for teacher use in the classroom

Abstract
This literature review focuses on the classroom use of a research based comprehension strategy called Think-Aloud. This is a strategy that readers of all abilities and ages can incorporate into their daily reading habits in order to more fully engage in text of all types. This is a fairly new strategy that has come to awareness and more widespread use within the last few years. Teachers need to provide direct instruction and model this strategy so that students correctly practice and use it alone and with partners. The final goal of the Think-Aloud strategy is that readers will become more aware of their own connections to text and fully awaken prior knowledge automatically, resulting in a better understanding of text. It is hoped that the Think-Aloud strategy will become yet another tool for students as they tackle any reading assignment.
A LITERATURE REVIEW OF THE THINK-ALOUD READING COMPREHENSION STRATEGY FOR TEACHER USE IN THE CLASSROOM

A Graduate Literature Review Analysis

Submitted to the

Division of Literacy Education

Department of Curriculum and Instruction

In Partial Fulfillment

Of the Requirements for the Degree

Master of Arts in Education

University of Northern Iowa

By

Cindy Kathryn Kauder

May 2007
This Review by: Cindy K. Kauder

Titled: A Literature Review of the Think-Aloud Reading Comprehension Strategy for Teacher Use in the Classroom

has been approved as meeting the research requirement for the Degree of Master of Arts in Education.

Timothy G. Weih  
Date Approved 5/7/07  
Graduate Faculty Reader

Penny L. Beed  
Date Approved 5-9-07  
Graduate Faculty Reader

William P. Callahan  
Date Approved 5-9-07  
Head, Department of Curriculum and Instruction
ABSTRACT

This literature review focuses on the classroom use of a research based comprehension strategy called Think-Aloud. This is a strategy that readers of all abilities and ages can incorporate into their daily reading habits in order to more fully engage in text of all types. This is a fairly new strategy that has come to awareness and more widespread use within the last few years. Teachers need to provide direct instruction and model this strategy so that students correctly practice and use it alone and with partners. The final goal of the Think-Aloud strategy is that readers will become more aware of their own connections to text and fully awaken prior knowledge automatically, resulting in a better understanding of text. It is hoped that the Think-Aloud strategy will become yet another tool for students as they tackle any reading assignment.
## TABLE OF CONTENTS

Title page.................................................................................... 1  
Signature page.............................................................................. 2  
Abstract...................................................................................... 3  
Table of contents............................................................................ 4  
**INTRODUCTION**........................................................................... 5  
  Rational of review........................................................................ 6  
  Purpose of review........................................................................ 6  
  Importance of review................................................................. 7  
  Terminology............................................................................... 8  
  Research questions to be answered................................................ 10  
**METHODOLOGY**........................................................................ 12  
  Method to locate sources............................................................ 12  
  Method to select sources............................................................ 13  
  Procedure to analyze sources...................................................... 13  
  Criteria to include literature....................................................... 14  
**RESULTS/LITERATURE REVIEW**.............................................. 15  
**CONCLUSIONS and RECOMMENDATIONS**................................. 29  
**REFERENCES**............................................................................. 33
A Literature Review of the Think-Aloud Reading Comprehension Strategy for Teacher Use in the Classroom

Introduction

Student comprehension of text is a topic that of concern to many educators, legislators, and parents today. If a student does not understand what they are reading then they are not able to discuss it, much less take an assessment of what was learned. As an educator, I am always looking for ways to help aid my 3rd graders' comprehension of text. My colleagues and I decided to focus on the Think-Aloud comprehension strategy for our K-4 career development plan. A Think-Aloud is a reading comprehension strategy aimed at increasing readers' comprehension by bringing the inner thoughts into dialogue with others. Thinking-Aloud is simply talking out loud, and sharing what one is thinking while reading text. This was the first time I became aware of this type of a strategy. Therefore, it is the purpose of this literature review to explore whether the introduction and use of the Think-Aloud reading comprehension strategy will help increase the comprehension performance and test scores of elementary students.

According to Wilhelm (2001) Think-Alouds permit students to listen as others investigate orally as they read in order to make sense of all text clues. The intention is that the listener will learn to identify and implement these strategies on their own. So the goal of repeated modeling through think-alouds by the teacher and peers is that readers will internalize this strategy in order to gain meaning of text. Wilhelm (2001) insists that Thinking Aloud is a natural and fundamental way that we can help ourselves accomplish the goal of understanding text. He believes that by saying aloud new steps repeatedly, they become a part of our “inner voice” of knowledge (p. 19).
Learning to read can be very difficult and frustrating. Once a student learns some of the processes to reading the next step is understanding of the text. Wilhelm (2001) shares that studies he reviewed point educators in the direction of the Think-aloud strategy, which has also been called Protocols. This strategy has been viewed as being “very useful in opening a window to understanding the highly complex and largely invisible processes of readers, writers, scientists, and others at work (p.20). The sharing of what goes on in the mind as reading and gaining meaning from text occurs can aid struggling readers in picking up another tool for comprehension.

**Rationale**

I chose this topic because my district, Monticello Community Schools, has chosen to implement the Think-Aloud model as a comprehension strategy to assist in the improvement of reading knowledge in Kindergarten through fourth grade. It is our hope that this strategy, along with the many other reading strategies that we use, will help improve test scores such as Iowa Test of Basic Skills (ITBS), GATES McGinitie Reading Test, and Basic Reading Inventory (BRI) in order to show that we are making every attempt to not leave our students behind. I wanted to see what specific research was out there as to what this strategy entailed and how to implement it into my classroom. I also wanted to know if there is evidence that this strategy has actually helped increase student reading comprehension in schools that have utilized it. I wanted to see what the chances were of our students benefiting from this reading tool.

**Purpose**

As an educator, I am trying to teach my students to pay attention to what is going on cognitively as they process reading materials. I want to teach them to be
metacognitive about their reading processes. I am interested in learning about and
teaching my students about the plethora of strategies that good readers use when they
read and process texts. The Think-Aloud strategy, if implemented correctly, could
become another tool in any reader’s bag of reading comprehension tricks that could help
them to be more successful with reading and written language. Thinking Aloud is a
reading comprehension strategy that is supposed to help students pay attention to what is
going on in their heads as they read.

Importance

The No Child Left Behind Act (2002) has brought reading comprehension to the
forefront of education; as well, it continues to be a parental concern. Reading
comprehension can be one of students’ biggest challenges in learning, because reading
comprehension is necessary in processing texts across the curriculum. No wonder many
school districts are looking for as many research-based strategies as possible to
incorporate into classrooms in hopes to increase children’s understanding of the written
language. Any strategy that may assist children in better understanding of text and the
world around them can only be a positive factor in education. The Think-Aloud strategy
is research-based and it will be the focus of this review. Teachers, administrators, other
education professionals, and parents can all benefit from this review, as it will provide
information about the use and effectiveness of the Think-Aloud strategy in the classroom
and can be carried over to anywhere a child reads. The more people that know about the
Think-Aloud strategy and how to use it the better chance readers have to internalize it
and gain a more complete understanding of text. This could result in an increase of
Literature Review of Think-Aloud

children learning to read effectively which in turn could positively effect test scores, which is what we are all striving for.

Educators want children to be actively engaged when reading. According to Wilhelm (2001) in learning to utilize the Think-Aloud strategy teachers benefit in the following ways: (a) deepen their own awareness of the reading process, (b) see what students do and don't do as they read, so that teacher's can implement appropriate instruction in the students’ Zone of proximal development, (c) understand what in a text confuses readers and assess students' use of strategies in order to diagnose and address specific problems, and (d) support readers to identify problems and monitor their own comprehension (p. 27).

This looks to be a very promising tool for teachers and students alike. If the strategy is implemented properly an educator potentially can gain knowledge of how best to help students to comprehend text. Lessons can be created to fit the needs of the students. Bereiter and Bird (1985) believe that the Think-Aloud protocols offer a way of assessing learning so that, even when overall effects on performance are good, failures to learn specific strategies can be perceived. Think-Alouds offer more than a strategy; they offer the teacher information about the student’s comprehension that allows them to adjust lessons in response to the data collected.

Terminology

Wilhelm’s (2001) definition of the term Think-Aloud refers to a reading comprehension strategy in which a reader shares his reading procedure with others by communicating all that he is observing, considering, feeling, and doing as he reads any
It is important for the readers of this review to have background knowledge of this term, as it is the basis of the review.

Wilhelm (2001) defines Vygotsky’s Zone of Proximal Development (ZPD) as the learning that students can do with help that they can’t do by themselves. In his book, Wilhelm shares Vygotsky’s belief that educators should teach students something new just when the reading task is within their zone of proximal development. It is believed that instruction and learning can occur with the “zone.” With the assistance of the teacher, children can engage in tasks that they could not otherwise do and content that they could not otherwise read and understand. New understandings and strategies are learned which pushes children to the next level. The student becomes more of an expert as well as more knowledgeable as a reader by being supported through this zone.

Wilhelm (2001) describes Engaged Reading as a reading objective that all teachers should have for their students. He sees it as, “The emotional and cognitive state when you are involved in a text to the fullest, using the author’s words to get inside someone else’s skin, understanding another’s point of view, connect this perspective to your own, converse with characters or an author, learning new information, and mysteriously come out with a changed understanding of yourself and your world (p. 27).

Laing & Kamhi (2002) define an Explanatory Inference as offering contributory associations between actions and events in the story, and are usually answers to why questions that supply explanations for a state, occurrence, or action. Making inferences is an integral part of comprehending text and is fundamental to emergent readers’ successful understanding of books (Laing & Kamhi, 2002; Richards & Anderson, 2003).
A child that can make inferences and connect to any author’s intentions can gain meaning that can be used across the curriculum (Hillman, 2003).

Laing and Kamhi (2002) identify *Working Memory* as the capability of concurrently storing and processing received spoken information. A student is able to readily grab information stored here at any time and use it to gain understanding. It is desirable for students to use this information to answer comprehension questions and recall story elements.

Cunningham and Shagoury (2005), characterize *Schema* as what readers bring to the content in terms of their prior knowledge and life familiarities. Educators are always trying to connect to a student’s prior knowledge. Students seem to internalize and understand text better if they connect it to something they already know or one of their own life experiences. Academic concepts are identified with, are better understood, and retained longer when connected to prior knowledge (schema). Wade (1990), would agree that in order to make meaning, the reader should incorporate new information gained from text with his or her background knowledge in a manner that makes sense.

*Research Questions*

This research about the Think-Aloud Strategy will be the basis for the literature review. The primary research question driving this review was: What is a Think-Aloud and how does an educator implement it in the classroom? The primary question was further detailed into the following secondary questions:

1. What is a Think-Aloud?
2. How does the Think-Aloud strategy help students?
3. What is the role of the teacher during the use of the Think-Aloud strategy?
4. What does research say about the effectiveness of this strategy?

5. Are there any precautions to consider when implementing this strategy?

6. What is the impact of implementing the Think-Aloud reading comprehension on struggling readers?

7. Does this strategy help all students?

These questions were chosen because they seemed to be the basic questions that I as an educator needed to be able to effectively learn about and utilize in my third grade classroom. If I am going to incorporate a new reading strategy I believe that it is imperative for me to teach my students in the correct manner to gain the most positive results possible in terms of reading comprehension.
Methodology

This review of literature focuses on the practice and use of the Think-Aloud reading comprehension strategy in the classroom. As a third grade teacher, I see varying degrees of reading comprehension every year. Children come to me with reading skills ranging from kindergarten to the junior high level. It is a struggle for me as a teacher to find as many ways to help children become proficient readers as it is for some students to read at grade level. I am always looking for what might work best for any given student. It is one of my goals to encourage all of my students to be lifelong readers and learners in order to live fulfilling lives. It is my hope that the study of this strategy can confirm my school district’s choice of implementing the Think-Aloud strategy into our classrooms by finding that it is a valuable tool for readers.

Methods for Locating Sources

In order to locate credible sources discussing the Think-Aloud strategy, I used those that were available to me. In looking for these sources I had two goals. The first goal was to locate research that was applicable to my research inquiry. The second goal was to find primary source studies that provided information on the Think-Aloud strategy focusing on the use and effectiveness of the approach.

Sources were obtained from a variety of resources, including the University of Northern Iowa’s Rod Library, the Wilson Web, ERIC and JSTOR databases, a consultant from Grant Wood AEA, and colleagues. My search involved changing the keywords from “Think-aloud” to “think-aloud Protocol” and doing a basic Prowler search through UNI’s Rod Library, My cohort instructor and advisor, Dr. Timothy Weih and Rod Librarian Ellen Neuhaus, introduced journal articles from Wilson Web and Rod Library
to me. I also searched on my own using terms such as “comprehension,” “think-aloud,” and “reading strategies.”

Methods for Selecting Sources

Sources were selected based on the information provided to me in direct relation to the Think-Aloud strategy. As I looked through numerous abstracts, I focused on those that seemed applicable and consistent with other findings that I had located. I looked for sources that showed the effectiveness of the think aloud strategy so that I could decide for myself if we made a good choice to implement this approach into our curriculum. Would this be a strategy that further increased reading comprehension for all readers? I also looked for sources that would answer each of my research questions.

Sources were chosen based on the following questions: Was the research presented in an easy to understand manner? Were the findings presented supported by the research presented? Did the findings answer my questions related to the topic of the review? Did the findings support other findings of literature I have already located?

I also considered the author, source(s), and the dates of the publications I read in order to decide if they were useful or not. Cost also played a factor in my research. I printed references that were free and readily available to me.

Procedures to Analyze Sources

In reading literature found from the previously mentioned sources, I referred to my research questions and asked myself if it was a source that addressed or encompassed those questions. I asked myself if that particular piece of literature was helping me to answer those questions. I was also looking to see if the research presented positive or
negative results from the use of the strategy. If the research did not aid me in the
understanding of my initial questions then I eliminated it and kept searching.

I printed the articles that I thought were relevant so that I could have a hard copy.
As I read the research I highlighted and/or underlined points of interest in relation to my
questions. I took notes, as well as posed questions in the margins of the articles in my
journal and on successive hard copies of my research paper. I continued to seek
additional sources, as requested by my instructor.

Criteria for Inclusion of Literature in the Review

I cross-referenced my readings. I read to see if the articles described similar
findings on the Think-Aloud strategy. I read to see if the literature answered the questions
I was researching. I read to see what kind of research was performed and looked at the
results to see what was said in both positive and negative terms (if any) about Think-
Alouds. I read to see how to implement this strategy in my classroom and to find out
what my role was in helping children internalize this strategy. I was also looking to see if
the literature gave me a clear vision as to what my role as a teacher and facilitator of the
Think-Aloud reading comprehension strategy would most effectively be.
Results

The primary research question driving this review was: What is a Think-Aloud and how does one implement it in the classroom? This chapter is filled with information and is organized around my research questions and the findings from my research. I begin with what the Think-Aloud strategy is, and move to how to implement it in the classroom. Next I look at the teacher’s and student’s roles while utilizing the Think-Aloud strategy. I share how expert readers process text, as well as ways to help struggling readers as suggested by the findings in my research. I end with some precautions to think about while implementing the Think-Aloud strategy as well as the impact on struggling readers’ comprehension.

Before I proceed with my results it is necessary to share the meaning of comprehension. Wilhelm (2001) contends that comprehension is, “being able to assimilate the new information and applying it to already well-established schema that readers already possess” (p.159). It is a process in which readers decide if they need to take new information and use it to create new knowledge or change one’s view of a topic as they had internalized wrong data. Readers may also decide that the new knowledge is something that they already knew, or was incorrect data so they don’t internalize it (p.159). So, what is meant by the comprehension process? Goodman (1982) defines the comprehension process as “the process of trying to make sense of a text; and what the reader has understood the text to mean at any point in time” (p. 310).

What is a Think-Aloud?

Year after year teachers seem to search for as many strategies and tools as they can that will help students better comprehend text. Educators are always on the lookout
for current research-based practices that will help children to be successful readers. What has research found about how successful readers process text? It has been learned that highly skilled readers use similar thought processes before, during, and after reading (Collins Block & Israel, 2004; McMackin & Lawrence, 2001). According to Collins Block & Israel (2004) they (a) adjust a reading goal according to their level of prior knowledge, (b) think strategically, (c) follow their intentions to the end of a passage, (d) monitor their comprehension, and (e) reflect on an author’s purpose within the constraints of a particular genre and their own reading objective” (p. 163-164). One practice that seems to lead to this type of process is called Think-Aloud. A Think-Aloud is a metacognitive procedure or approach in which an educator vocalizes thoughts and behaviors out loud while reading a piece of text aloud in order to model comprehension (Collins Block & Israel, 2004; Kasper, 1998; Willemain, 1995; Block, 1986).

“Comprehension is not an overt process but rather an inner-self dialogue about meaning of text. Thinking-Aloud makes this internal process observable” (Walker, 2005, p. 688). Many poor readers do not catch on to this process unless instructors demonstrate and teach them how to construct meaning from text. They do not know how to monitor their thinking processes so someone needs to teach them (Collins Block & Israel, 2004; Walker, 2005). In order to build meaning, the student should combine new knowledge obtained from text with his or her prior knowledge in a manner that make sense. This is known as relating one’s schema (Block, 1986; Wade 1990;). Cunningham & Shagoury (2005) also found that as students dive into their understanding of the world around them, they are more able to proceed to other essential reading comprehension skills, such as “text-to-text relationships, inferences, inquiring, and synthesis” (p. 54). Studies have
found that a reader’s ability to make inferences has been shown to play an important role in understanding and integrating texts (Cunningham & Shagoury, 2005; Kucan & Beck, 1997; Laing & Kamhi, 2002; Block, 1986).

Kucan & Beck’s (1997) review of research found that there were three stages to the Think-Aloud process. First, educators model comprehension monitoring and hypothesis formation while reading a text aloud. If an educator is reading a book as a read aloud to his or her class, he or she can stop at various times and share what he or she is thinking. Questions that may arise as an educator reads can be modeled to show what is occurring in his or her head as the story unfolds. Next, educators elicit student participation in the same strategic activities. After modeling, an educator can ask students to volunteer what they are thinking at various points during the read aloud time. Allowing students to share what they think will happen next allows them to connect to the story and what they already know. An educator can also allow students to share a question they may have at certain points of the story. The question may be answered during the read aloud session or by the end of the story. To conclude, students internalize the strategies as they read independently.

Kucan & Beck (1997) stress the importance of social interaction to make the Think-Aloud strategy successful. Students need time to share their thoughts with the group or within partners. This sharing allows the students to better connect with what is being read and can aid in better understanding of the text. An educator could have their students journal at various points of the read aloud session. Then large or small group sharing should take place so they can hear what others were thinking.
How Does the Think-Aloud Strategy Help Students?

Do students actually learn to “Think-Aloud” for themselves when reading after learning about this strategy? I understand the goal after repeated modeling of this practice is that students will start to process text in this manner and make connections that will aid in more extensive comprehension of text. What will the students then be able to do if they effectively use the Think-Aloud reading strategy with text on their own? According to Wilhelm’s (2001) suggestions, a student that is able to use the Think-Aloud strategy independently will be able to do the following:

1. Understand that reading should make sense.
2. Move beyond literal decoding to comprehending the global meaning of text.
3. Learn how to read by using many different strategies.
4. Use particular strategies when reading particular text types.
5. Share ways of reading. In sharing with peers and teachers, students see that reading is an enjoyable social pursuit through which they can relate to one another about texts and ideas readers.

Learn about themselves and their own thinking and reading. This reflection helps students learn and use strategies on a self-conscious level. (p. 33-34)

How should a teacher help students to understand the importance of a strategy and learn how to utilize it on their own? How could a teacher be successful at helping children see that the goal of reading should shift from “learning to reading to reading to learn” (Smolkin & Donovan, 2003, p. 27).
What is the Role of the Teacher During the Use of the Think-Aloud Strategy?

Nambiar (2005) states the following:

“There is clearly a need to rethink the way reading is taught in school and encourage learners to think critically and be more aware of what they are reading. Learners should be encouraged to read not just for examination purposes but simply to appreciate different kinds of writing.” (p.9)

An educator needs to tell children what he or she intends to do as she or he models any strategy. In Wilhelm’s (2001) book on the Theory and Practice of Improving Comprehension with Think-Aloud Strategies, he shares six steps as identified by literacy researchers Taylor, Harris, Pearson, and Garcia (1995, p. 13), that teachers should follow as they actively modeling a reading strategy.

1. Teacher explains what a strategy consists of.
2. Teacher explains why this strategy is important.
3. Teacher explains when to use the strategy in actual reading.
4. Teacher models how to perform the strategy in an actual context.
5. Teacher guides learner practice. Teachers and students work through several increasingly challenging examples of the strategy together using authentic text. Teacher gradually releases responsibility to the students, allowing them to do what they are capable of on their own and intervening and supporting only when needed and only as much as absolutely needed.
6. Students independently use the strategy as they pursue their own reading and projects.
As I read these steps, I wondered if all children would be able to incorporate the think-aloud strategy that my district has chosen to add to the Kindergarten through fourth grade reading instructional practices and whether it would help them increase scores on standardized tests such as Iowa Test of Basic Skills (ITBS), Basic Reading Inventory (BRI), and Gates McGinitie Reading Test. Collins Block & Israel (2004) put that question at ease as in a recent study finding which involved 1,200 Kindergarten through fifth grade students in the southwestern United States it was found that after using 12 effective thinking processes students' reading vocabulary, comprehension, and fluency had increased. The 12 steps and a summary of what they mean for good readers include:

1. Overview of the text (Good readers consider how to choose a book that is enjoyable.)

2. Look for important information (Good readers attend to important details in a story.)

3. Connect to an author's big idea (Good readers find ideas throughout the text that go with the author's main theme.)

4. Activate Relevant knowledge (Good readers draw upon their own prior knowledge that is important to the text.)

5. Put myself in the book (Good readers pretend they are a part of the story, maybe even the main character.)

6. Revise prior knowledge (Good readers update their knowledge to make sure it is accurate and make predictions as they read.)

7. Recognize an author's writing style (Good readers get to know their authors and their style so that they can predict what will happen next.)
8. Determine word meanings (Good readers use a variety of decoding strategies to gain meaning from words in the story.)

9. Ask questions (Good readers ask themselves questions before, during, and after they read and they look for these answers in the text.)

10. Notice novelty in text (Good readers think about the author's ideas and how it is effected by the author's use of words.)

11. Relate the books to my life (Good readers connect what they read to their own lives.)

12. Anticipate use of knowledge (Good readers use knowledge gained from one book to another.) (p.155-163)

These steps were implemented by some of the K-5 teachers from the southwestern United States regularly until they felt students could internally Think-Aloud for themselves.

Wilhelm's (2001) take on Vygotsky's view was inspiring. He shared that any child can learn the next more complex approach or conception if given accommodating training. According to Wilhelm, students can and will learn, no matter the barrier, if they are provided with the right assistance.

What Does Research Say About the Effectiveness of this Strategy?

Think-Aloud practices have been found to provide a way of assessing learning so that, even when overall performance is good, failures to learn specific concepts can be detected (Bereiter & Bird, 1985). These authors conducted a teaching experiment with eighty students in the seventh and eighth grades from Ontario. All of them were at least average in oral reading as well as in understanding when silent reading. There were four strategies used: Restatement, Backtracking, Demanding Relationships, and Problem
Formulation. There was a group of 15 that had modeling of the strategies and a group of 15 that served as the control that had no modeling. All had a pretest and a posttest. The results showed that students who were shown how to use the restatement, backtracking, and problem solving strategies and then given opportunities to implement them themselves showed a greater increase in reading comprehension than the control group. They found significant reading comprehension advantages when the Think-Aloud strategy was used. The p value was < .0001 (p.147). They found that teachers were able to plan future lessons based on what was heard while students were thinking aloud in order to focus on strategies that students were missing in their quest for comprehension. This points to the importance of teachers focusing on what is missing from nonproficient readers’ bag of comprehension tricks. The goal of giving students reading strategies is to assist them in becoming successful readers of text-all kinds of text. Loxterman, Beck & McLeown (1994) reiterate the effectiveness of implementing the Think-Aloud strategy in their findings of sixth grade students reading text silently without thinking out loud and with thinking out loud, and then answering recall questions. There were two studies done. One study had sixth grade students recall what was read and they had to answer open-ended questions right after they read. The other study took all of the first study and added a variety of to remember information a week after reading (p.352). They found that increased performance was seen in middle-level students who used the Think-Aloud strategy immediately after reading silently versus students who were not allowed to think out loud after reading silently. 42.7% of students who read silently and were allowed to think out loud after reading answered more questions correctly versus 20.7% of students
who were not allowed to think out loud after reading silently (p.357). This increased performance was found to be close to that of the more proficient readers in the group.

Along with Wilhelm's list of how Think-Alouds successfully help students' reading of text, Laing and Kamhi's (2002) findings suggest that the quantity of explanatory inferences (telling why something happened in a story) created is considerably related to comprehension performance. (p. 437) In their study they found that the majority (46%) of the average readers out of 40 third-grade students' inferences were explanatory compared to only 36% of below average readers using that strategy. (p.441) They found that “average readers produced significantly more explanatory inferences than below-average readers, and comprehension performance was significantly better for both groups in the Think-Aloud condition than in the listen-through condition.” (p.441) This shows that the explanatory inference seems to play a significant role in the comprehension act. Laing and Kamhi (2002) also found that “readers who are continually attempting to link story propositions are more likely to maintain causal information in working memory and are able to use this information to answer comprehension questions and recall story propositions” (p.437). Their research also showed that “sufficient working memory is crucial to maintaining causal links as the story progresses” (p.441).

Janssen, Braaksma, & Rijlaarsdam's (2006) examination of tenth grade proficient and non proficient readers using the Think-Aloud process found that proficient readers were more evaluative and emotional in their responses to the stories than were the more unsuccessful readers. Strong and weak readers were observed to see how they interacted with short stories while using the Think-Aloud strategy. Researchers were looking for the
differences shown between proficient and weaker readers. They found that better readers evaluated text more often and included more emotional responses when answering questions than the nonproficient readers did in the study. They would also suggest that good readers mirrored a more individual, subjective engagement with the text than did weaker students. Through continued modeling and student use of the Think-aloud strategy and evaluation, nonproficient students were able to elicit more emotional responses and were better able to connect to literature.

Migyanka, Policastro, & Lui (2005) conducted a study of three lower elementary teachers and how they model and use the Think-Aloud strategy with three struggling readers. In the study the teachers share samples of students thinking aloud as they read the story, *Chrysanthemum* (Henkes, 1991). One student is shown to enjoy the story even though he struggles with “unfamiliar vocabulary” and cultural differences in the text. Another student shows a struggle with decoding and fluency. The last student uses the pictures to relate to the story and doesn’t use very many reading strategies. *Chrysanthemum* was chosen because it fit the needs of all three students in the study. The teachers used the Think-Aloud strategy with the book to show the kids how to make connections and predictions, and to show and teach a variety of reading strategies that the students could use when reading any text. The teachers shared that while doing informal assessments of the readers, the students made more observations and connections to the story after the teachers did Think-Alouds with them throughout the book. Migyanka et al. (2005) found that the teachers’ ability to model and facilitate the Think-Aloud procedure was one of the most important components that determine the success of student use and internalization of the strategy. (p.177) They also stated that, The success of thinking
aloud is getting the students to be engaged-visually, emotionally, and verbally with text.”
(p.177) Research seems to point to positive results from teaching and using the Think-Aloud strategy. I wondered if there were and particular points to consider while implementing this strategy into my classroom?

Are There Any Precautions to Consider When Implementing this Strategy?

Wilhelm’s words of caution made me realize that no strategy is the answer to every challenge (2001). Wilhelm points out that there are many things to keep in mind so that strategy instruction isn’t overstated to the point that it hinders rather than supports engaged reading. He submits the following for consideration:

1. Reading strategies are important only insofar as they assist readers to construct meaningful understandings of texts. With this level of comprehension, readers can respond to, converse with, and even resist the meanings the author seems to put forth.

2. Teaching strategies are important only insofar as they assist readers to comprehend and respond to text. In other words, think-alouds are a useful teaching strategy when they help a reader through his or her zone of proximal development, assisting him or her to develop a particular strategy or set of strategies that he or she cannot yet use independently, and when these strategies help him or her to engage with a text important to him or her current purposes.

3. Think-alouds, like any teaching strategy, are not appropriate when students already know how to use a featured reading strategy, when they do not have a need to use the strategy, or when the strategy is so complex that it lies beyond their zone of proximal development. (p. 15-16)
Wilhelm (2001) advises that Think-Alouds can be a means to an end, and the final result is engaged and insightful reading. Educators should use the technique flexibly in order to give power to the readers.

What is the Impact of Implementing the Think-Aloud Strategy to Improve Reading Comprehension of Struggling Readers?

Barbara Walker (2005) suggests that the Think-Aloud strategy can be made even more concrete by educators who keep track of self-statements and by using self-evaluation sheets that discuss strategy use. Walker observed teachers discussing reading strategies in a summer reading center working with middle school children, with fifth grade struggling readers, with high school children that had some kind emotional problem. She observed an increase in all of these students' ability to comprehend text by answering questions after reading and the discussion. She contends that by using these added procedures with the Think-Aloud process it can help students who are passive to be more aware of a variety of approaches to understanding text. The discussion held after filling out the sheets can be seen as a tool to allow students to talk about personal strategy use and an opportunity for them to explain what strategies work in a variety of reading situations. It allows students to set goals for better understanding.

Janssen, Braaksma, & Rijlaarsdam (2006) seem to agree with Walker as they feel that the use of reading logs and self-verbalizations can aid understanding because they allow students to slow down, think about, and monitor their own comprehension of text. They conducted a study involving 19 Dutch tenth-grade students who were about an equal mixture of strong or weak readers. All of the students read five fictional stories and used the Think-Aloud strategy. Janssen et. al (2006) found that good readers evaluate and
engage personally with text while weaker readers tended to retold the story or made inferences. They contend that less proficient readers should be encouraged to bring to the surface and expand their feelings and individual judgments, not only after the final reading phase, but also throughout the reading process. They should think about the characters, character actions, the story of events, how the story is written, as well as other aspects of text.

**Does this Strategy Help All Students?**

The only study I found with any negative results from the use of the Think-Aloud strategy was one done by Caldwell & Leslie. In their study, Caldwell & Leslie (2003) sought to find whether the Think-Aloud strategy would help six eighth-grade students understand high school level text as they went from junior high to high school. The students chose their own story, were asked to retell it in their own words, had to connect to prior knowledge before reading, and had to answer questions without looking back after they read independently. The questions used were based on facts and others relied on the students to make inferences. During the second reading the examiner did a modeling of the Think-Aloud strategy and allowed students to Think-Aloud too. Caldwell & Leslie found that the Think-Aloud strategy was helpful in some literature, but it depended on the difficulty level of text and how comprehension was measured. It was also found that not all junior high students would be successful in all high school literature. It will depend on the text and if it is at the student’s independent reading level. So it is important that teachers of all grade levels know how to effectively implement strategies such as the Think-Aloud strategy to aid in student comprehension of a variety of text on their own.
Having found good information supporting my questions from the beginning of the review, I feel it is time to draw conclusions about my findings about the Think-Aloud reading comprehension strategy and its effectiveness as a tool for readers.
Conclusions

This literature review was intended to discover what a Think-Aloud is, how to implement it in the classroom, and how it affects all readers, and struggling readers in particular. The hope was that the results of this review would support educators in using Think Alouds in their Kindergarten through twelfth grade classrooms as a supplement to their current curriculum. When teachers incorporate the Think-Aloud strategy, they must take the time to explain, model, allow student practice, and implement self-evaluations/discussions throughout the use of the practice (Collins Block & Israel, 2004; Walker, 2005; Wilhelm, 2001). Educators must also take time to investigate which students are stronger readers, as this approach may not be as beneficial for proficient readers as it is for struggling readers (Wilhelm, 2001).

The following subsections of this literature review discuss a variety of related topics. The first details some limitations of this study. Next, I discuss ways that teachers in the classroom may utilize the findings. The third subsection focuses on future research that might discover whether the Think-Aloud reading comprehension strategy is retained and utilized by students as they get older, and whether the strategy continue to assist students in their comprehension of text. The final section discusses the ways that professional development could be impacted by the findings of this research.

Limitations

One limitation of this study of literature was that the writer of this literature review relied on articles that were readily available. Articles that were available through purchase were not used. There could have been some valuable findings in research not used due to this matter. The literature was mostly geared toward elementary school
children with some research on middle and high school students as well as college level readers. Most of the strategies were geared towards elementary students, but could be used with older students. The primary focus of the review was information that will be helpful to planning for the instruction of elementary students. Minimal research was found to answer my last question, which was whether research indicated that students learned to think aloud for themselves after repeated practice and use of the think-aloud strategy at a young age. In a few studies it was found that students took this strategy and utilized it on their own. More research is needed in this area.

**Recommendations**

First, my research has shown that it is imperative that elementary teachers get to know their students' reading abilities. In doing this, teachers can tell which students may better benefit from the Think-Aloud strategy. The reading material that is used for think-alouds must be at the reader's Zone of Proximal Development (ZPD) in order for it to be the most effective. In order to accomplish this, the teacher will need to find time to work with children in small groups or individually. One suggestion is to work with students within their zone during small-guided reading group instruction. Another might be to work with individuals or small groups during Reader's Workshop reading periods.

Secondly, my research findings have shown that elementary teachers need to model the Think-Aloud procedure repeatedly and explain it to students. Struggling readers need guidance and support and then they need to be given ample opportunities to apply the strategy across the curriculum for themselves if they are going to be given a chance to internalize it. One suggestion is to Think-Aloud while reading out loud to your class. Point out what you are thinking at different sections of the book.
Thirdly, students would then need to be given a chance to use the strategy with peers, which would lead to independent use of the strategy. Get your students involved and ask them to Think-Aloud to the group or with a partner. In my class, I call this *Pair-Share* time.

After learning the Think-Aloud procedure, students would have the greatest opportunity to utilize yet another tool that could assist them in their comprehension of text across the curriculum.

*Future Research*

Future Think-Aloud research could attempt to show the importance of *all* educators implementing this strategy in the classroom of their various grade levels (Kindergarten through twelfth grade and beyond) if learning this strategy is in fact retained and proven to be an effective comprehension strategy. Also, more research needs to be done on Think-Alouds in terms of internalization and usage of the strategy as the students proceed to the upper grade levels. Are there any other procedures in conjunction with the Think-Aloud procedure that could enhance the strategy? One such practice brought up by Kucan & Beck (1997) was that of Reciprocal Teaching, which is often seen as peer teaching. More research as to how this practice assists the effectiveness of the Think-Aloud strategy needs to be done. Further research also needs to be done at the lower elementary level, as that is where reading begins. Just how do successful readers learn to read and seemingly already know to Think-Aloud internally? Studying successful emergent readers could gain much information so that educators can engage in effective practices at the youngest age possible to elicit proficient meaning-making reading skills. Educators need to focus on teaching children to read to learn. Reading to learn is
generally accepted as a maturational state that children achieve after they have mastered “learning to read” and can focus more of their attention on meaning making.

**Professional Development**

Current research by such researchers as Caldwell & Leslie, 2004; Migyanka, Policastro, & Lui, 2005; Loxterman, Beck & McLeown, 1994; and Wilhelm, 2001, support the idea of professional development for elementary education. It would be beneficial for Educators across the nation to be made aware of the Think-Aloud strategy and its effectiveness in building students’ skill at meaning making. Professional development could potentially guide teachers of all content areas in applying the think-aloud strategy in their teaching. Administrators need to be made aware of the effectiveness of this strategy so that they can incorporate it into in-service activities for teachers. It is a reading comprehension strategy worth looking into if we want successful readers across the nation. Colleges and professors of up and coming educators should also incorporate this into their practices so that incoming teachers are already able to utilize such a strategy in the classroom.

Overall the Think-Aloud reading strategy, if implemented effectively with lots of modeling, practice, and support, can be a useful tool for readers of all ages to gain comprehension of a variety of texts. Administrators and educators would be well advised to include this strategy in their curriculum.
References


