

DEAF STUDENTS' METACOGNITIVE AWARENESS  
OF THE READING PROCESS  
AND THE  
CHARACTERISTICS THEY FEEL  
ARE INHERENT IN PROFICIENT READERS

THESIS

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## **Abstract**

This study was conducted to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers. The subjects involved in this study included fourteen tenth-grade and thirteen fourth-grade deaf students taking Language Arts/English classes from various residential and nonresidential school districts in Monroe County. The students were given the Index of Reading Awareness (IRA) developed by Jacobs and Paris (1987) in the form of a questionnaire. The questionnaires were completed independently or with the help of an interpreter or teacher of the deaf to translate the questions from English to Sign Language. The data were collected and analyzed for evidence of deaf students' metacognitive awareness during the reading process and the characteristics they felt were inherent in proficient readers. Similarities and differences were noted in both areas as well as any common patterns of behaviors and/or perceptions between the two grades involved in the study. Results of the study indicated that the level of deaf students'

metacognitive reading awareness increased with age. The deaf students perceived proficient readers to be those who possess a high level of vocabulary knowledge and who enjoy reading. Proficient readers were perceived to be those who read slowly, often, and are persistent with their efforts.

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## **Chapter 1**

### **Purpose**

The purpose of this study was to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers.

### **Research Questions**

1. What level of awareness do deaf students possess about the skills and strategies needed for successful reading comprehension?
2. What techniques do deaf students find helpful in facilitating their reading comprehension?
3. What are deaf students' conceptions regarding the characteristics of proficient readers?

### Need for the Study

Successfully reading and comprehending written English is a process that escapes many deaf individuals. In a large-scale study conducted in the United States in 1974, the median score on the paragraph-reading subtest of a special version of the Stanford Achievement Test standardized for hearing-impaired students reached a grade equivalent of approximately 4.5 among students aged 20 and above (Trybus & Karchmer, 1977). These studies support similar findings that, as a whole, most deaf students do not graduate from high school fluently reading at an appropriate age or grade level.

Many factors affect the reading achievement levels of deaf students. Deaf children often do not have a communication system until after the age of 2 or 3 when their deafness is diagnosed. This delay in communication creates wide gaps in their incidental learning and conceptual understanding of the world around them. The communication abilities of the parents and the access to early intervention programs all contribute to the success or the delay of the child's learning. The structure of English itself and the

differences between English and American Sign Language play a vital role in the reading problems that confront deaf readers.

In an effort to bridge the gaps in deaf students' learning and reading abilities, instruction in reading has commonly focused on those areas in which deaf children have the greatest difficulty instead of taking advantage of their cognitive strengths (Pehrsson, 1978). Focus on English grammar structures and the rewriting for simplification of reading materials have often been common practices used to improve the reading comprehension of deaf students. Such practices where the teacher prescribes exactly what, or how, the child learns do not allow the deaf student the opportunity to flourish cognitively (Christensen, 1990). Yurkowski and Ewoldt (1986) report that such an approach is unnecessary because deaf readers have a strategy of bypassing syntax and processing print on the basis of meaning.

Intense focus has been given to the problems deaf students have when reading printed English. The process they go through is equally, if not more, important. What do deaf

readers do to create meaning out of the printed text? Research has shown that they do possess strategies to aid with reading comprehension. Are they aware of the strategies they utilize while reading? Due to their gaps in incidental learning, do they have misconceptions as to the skills and strategies inherent in proficient readers? If educators are to focus on the deaf reader's cognitive strengths as Moores and Christensen suggest, they need to know the answers to all of these questions.

### **Definition of Terms**

**Deaf:** Individuals with a severe to profound hearing loss in the range of 60 to 110+ decibels.

**Metacognition:** The knowledge and control one has over his or her own thinking and learning activities.

**Proficient Reader:** One who reads fluently for meaning while strategically monitoring his/her reading behavior.

**Reading Strategies/Skills:** The information one has learned regarding the process of reading (e.g. decoding, spelling, phonics) and the thoughtful plans or operations readers use while involved in the reading process.

### **Limitations of the Study**

1. The number of subjects was small and included an unknown variety of student learning abilities.
2. The study allowed for the use of interpreters with unknown levels of Sign Language proficiency. The study assumed that the interpreters are competent due to their employment in the school districts which service the subjects.
3. The study did not account for the hearing status of the parents of the students involved.

## **Chapter II**

### **Review of the Literature**

Reading fluently is a complex task involving cognitive, perceptual, linguistic, and metacognitive abilities. The area of metacognition in reading has been a focus of great attention in recent years as the definition of reading has shifted from being viewed as a collection of isolated skills to a total process of interrelated skills and strategies (McLain, 1991). In an effort to understand students' various levels of reading comprehension and to encourage the practice of effective, purposeful reading, research studies have been conducted to discover the impact of metacognitive ability on the reading process.

Readers who are aware of their thinking as they engage in the reading process and use that awareness to regulate what they are doing, are using metacognition. Studies conducted by Baker and Brown (1984) and Jacobs and Paris (1987) have divided metacognition in reading into three categories: cognitive awareness, self-regulatory mechanisms,

and compensatory strategies. Cognitive awareness involves a person's knowledge about his/her own cognitive resources and an evaluation of the reading task. Self-regulatory mechanisms encompass a person's ability to regulate what he/she knows during the reading process while compensatory strategies involve a person's use of corrective strategies when reading. Such metacognitive strategies include predicting, self-monitoring, and self-questioning (McLain, 1991).

The number and type of questions readers ask themselves while engaged in the reading process can have a great impact on their level of comprehension. A reader's questions often relate to the code or printed form of the language, the language of the text being read (e.g., vocabulary, syntax, or figurative language), the content, the purpose for reading, and how the reader will be expected to demonstrate comprehension. Comprehension occurs when correct answers are obtained for one's self-generated questions ( LaSasso, 1993).

It has been noted that deaf students use many such metacognitive strategies similar to those used by hearing

readers to comprehend written material (Ewoldt, 1977; Soderbergh, 1985). One study conducted by Andrews and Mason (1991) revealed that the deaf subjects used the same strategies as the hearing subjects in varying degrees and frequencies. These strategies included: utilizing background knowledge and context clues, rereading the sentence, looking back into the text, looking ahead, and the use of graphemic strategies. The strategies that appeared the most useful for the deaf readers included utilizing background knowledge and rereading the material.

A unique strategy not listed above is one that is specific to deaf readers. This strategy involves the recoding of printed English into some form of sign language. Although some deaf readers are able to use sound recoding for memory and reading, most deaf readers use the kinesthetic codes of fingerspelling, signs, or a combination of both (Lichtenstein, 1984). Hirsh-Pasek and Treiman (1983) found that recoding into sign provided the deaf subjects with the maximal comprehension

advantage during reading. Deaf subjects, as a group, did not use the recoding strategies of articulation or fingerspelling but did recode into sign.

Recoding printed English into sign may be the strategy of choice for many deaf readers, however, it does pose a serious problem. There are very few occasions where spelling-sign correspondence rules and a regular relationship between the form of a printed word and the form of the corresponding sign exist between the two languages of English and American Sign Language (Hirsh-Pasek & Treiman, 1983). Despite this disadvantage, the comprehension and memory achieved by the use of recoding into their native language of sign seems to outweigh the problems it causes deaf readers.

Although many deaf and hearing readers utilize similar metacognitive strategies while reading, a study conducted by Krinsky (1990) reported that the hearing adolescents in the study were able to assess their "feeling of knowing" while reading more accurately than their deaf counterparts. Several

factors were suggested to attribute to this finding. Deaf students' characteristic constricted vocabulary usage and familiarity with common vocabulary words as well as the signability of those vocabulary words was shown to affect their "feeling of knowing". Familiarity or the degree of prior learning was also an important factor. Prelingually deafened children often display gaps in their basic conceptual learning due to the lack of early environmental language interaction. Therefore, their degree of prior learning is often less than that of their hearing peers. However, Franzen and Gormley (1978) concluded that the surface structure differences between sign language and English may inhibit the application of prior knowledge; therefore the difficulties experienced by deaf readers may be primarily due to language differences rather than to a language deficit.

Independent of the factors, reading comprehension proves to be an area of extreme difficulty for most deaf children and youths. In Reid's study (1966) it was found that

children approached reading as a "mysterious activity to which they come with only the vaguest expectancies." (p.56). Young readers often do not appear to understand the goals or meaning of reading. In addition to understanding the purposes and scope of reading tasks, readers must learn to employ strategies while they are engaged in the reading process. According to a study conducted by Palinscar (1984), direct instruction of metacognitive skills often increases the reading comprehension of underachieving readers.

Although Palinscar's study did not address deaf readers specifically, many such students would fall under the category of underachieving readers. It has been shown that deaf students generally do not read well. The area of reading comprehension seems to be the area of greatest difficulty. Teachers of the deaf commonly focus on imparting the development of vocabulary and word recognition skills. As a result, deaf students often perform slightly better in reading than they do in other subject areas during the early grades.

However, after third grade there is a significant decline in reading improvement and subsequent language related subjects. In fact, only a limited number of deaf students manage to achieve a functional level of literacy (Clarke, 1982). In a study conducted by Hammermeister (1971), it was shown that although deaf students may improve their development of vocabulary skills, there is often no appreciable change in their reading comprehension. Both hearing and deaf underachieving readers need appropriate instruction on strategies that will enhance their ability to comprehend written material. Deaf students may certainly benefit from direct instruction on how to monitor their own comprehension, using the strategies of skilled deaf and hearing readers as role-models.

Having reading role-models has the potential of serving as a guiding concept to children about their own personal reading limitations and abilities. However, do most underachieving readers have a clear concept as to what actually makes an individual a proficient reader? If poor

readers are to strive to improve their reading skills, knowing the characteristics of a good reader is of utmost importance. Numerous studies have been conducted by researchers also interested in this topic.

Although it would be impossible to describe every aspect of a good reader, studies have found consistent similarities inherent in proficient readers. Good readers are more often concerned with accumulated information across sentences than with individual words. They skip unknown words and make guesses based on partial information. They recognize meaningful units of information rather than individual letters or words. They use linguistic redundancy to predict what meaningful material will follow (Garner,1981). Proficient readers monitor their understanding while reading to see if it makes sense. They check their own knowledge and compare it to the reading while varying their strategies to remove difficulty in interpreting the text (Singer,1982).

In comparison, poor readers often approach reading as a

series of bits and parts instead of as a whole. They focus on the words in sentences and see reading mainly as a decoding process (Garner, 1981). They tend not to use semantic and syntactic information effectively and often neglect contextual information that would assist their guessing (Ryan, 1981). Poor readers generally have difficulty making adjustments and employing effective strategies when reading. They are often unconcerned with correcting misreadings, they monitor less frequently, and try to maintain their interpretations even in the light of contradictory information (Edwards, 1978).

Myers and Paris (1978) found that young readers were often unaware of many important parameters of reading. They were frequently insensitive to task dimensions or the need to utilize specific strategies for reading different materials. The subjects in the study reported few strategies or reasons for checking their own understanding or progress. They were basically unaware of specific characteristics of proficient readers.

The importance of the development of reading awareness and knowledge of the skills inherent in proficient readers was stressed in a study conducted by Paris and Jacobs (1984).

Such developmental attainment often distinguishes advanced readers from beginning and/or underachieving readers.

Proficient readers frequently engage in deliberate activities that require flexible strategies, planning, and periodic self-regulation and monitoring. Beginning and underachieving readers do not utilize such skills and often seem unaware of their existence. Data collected from Paris and Jacob's study (1984) clearly show the importance of reading awareness for successful strategy acquisition. It has been demonstrated in various studies that children at different levels of awareness benefit from direct instruction about reading awareness. Children must not only be aware of reading skills and strategies but they must also view them as being useful means to a desired end. The utilization of strategies must hold personal significance for the reader.

## **Chapter III**

### **Design of the Study**

#### **Purpose**

The purpose of this study was to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers.

#### **Research Questions**

1. What level of awareness do deaf students possess about the skills and strategies needed for successful reading comprehension?
2. What techniques do deaf students find helpful in facilitating their reading comprehension?
3. What are deaf students' conceptions regarding the characteristics of proficient readers?

## **Methodology**

### **Subjects**

This study involved fourteen tenth-grade and thirteen fourth-grade deaf students taking Language Arts/English classes from various residential and nonresidential school districts in Monroe County.

### **Materials**

The Index of Reading Awareness (IRA) developed by Jacobs and Paris (1987) was used to measure the level of the subjects' metacognitive knowledge of reading comprehension (See Appendix). The IRA is a twenty item multiple-choice instrument that measures four aspects of metacognition in reading including evaluation, planning, regulation, and conditional knowledge. Evaluation refers to one's appraisal of the task and that of one's cognitive abilities. Planning involves the selection of particular actions to reach goals that have been set or chosen. Regulation concerns monitoring and

redirecting one's efforts during the course of reading to reach the desired goals. Conditional Knowledge refers to the particular circumstances under which one applies the knowledge of knowing when and why to utilize a strategy. Conditional Knowledge also involves knowing the rationale for using a particular reading strategy.

Each question on the IRA was scored with a 0,1,or 2 point score with 0=inappropriate response, 1= partially adequate response, and 2= strategic response as deemed by the answer score sheet provided with the survey (See Appendix D). Two additional open ended questions were added by the researcher. One question surveyed the subjects' perception of the skills and strategies inherent in proficient readers while the other asked the students to explain what part of the reading process gave them the most difficulty.

## **Procedures**

The students were given a questionnaire focused on surveying their awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers. These questionnaires were given to the students to complete independently or with the help of an interpreter or teacher of the deaf to translate the questions from English to Sign Language. Responses to the questions were recorded in either of the following manners depending on the skill or comfort level of the student: writing the answers themselves or signing the answers to a scribe. The researcher mailed the surveys to the individual teachers and collected them by appointment or via the mail depending on teacher preference.

## **Analysis of the Data**

The questionnaires were collected and analyzed for evidence of deaf students' metacognitive awareness during the reading process and the characteristics they feel are inherent

in proficient readers. Similarities and differences were noted in both areas as well as any common patterns of behaviors and/or perceptions.

### Summary

This chapter has described the subjects, materials, and procedures which were used to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers.

## **Chapter IV**

### **Analysis of the Data**

#### **Purpose**

The purpose of this study was to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers.

#### **Findings and Interpretations**

##### **Deaf Students' Levels of Awareness About The Skills and Strategies Needed for Successful Reading Comprehension (Research Question #1)**

This study focused on four general areas of metacognitive awareness: Conditional Knowledge, Planning, Regulation, and Evaluation. There were five questions per each metacognitive area on the survey with the exception of Evaluation which had four. Therefore, for the 14 tenth graders combined, there were a total of 70 questions per

metacognitive area and a total of 56 questions in the area of Evaluation. For the 13 fourth graders combined, there were a total of 65 questions per metacognitive area and 52 total questions in the area of Evaluation. It was found that the area of greatest strength for the tenth graders surveyed was the area of Evaluation with 43 of the possible 56 questions (77%) receiving the highest possible rating of 2 points. The fourth graders scored highest in the area of Conditional Knowledge with 35 of the possible 65 questions (54%) receiving a score of 2. The area of greatest weakness for both the tenth and the fourth graders was the area of Regulation. In the tenth grade, 20 of the possible 70 questions (31%) received a 0. Twenty-two of the possible 65 questions (34%) received a 0 rating for the fourth graders. Summaries of these data organized into the four areas of metacognitive awareness are indicated in Table I and Table II.

Table 1

Total Number of Questions Answered for Each Score per  
Metacognitive Area

	C. K.		E.		P.		R.	
<u>Grade</u>	10	4	10	4	10	4	10	4
<u>Score</u>								
2	41	35	43	27	40	25	26	15
1	22	20	3	12	23	24	24	28
0	7	12	10	13	7	16	20	22

C.K. = Conditional Knowledge  
 E. = Evaluation  
 P. = Planning  
 R. = Regulation

Table II

Percentage Score per Metacognitive Area

<u>Grade</u>	C.K.		E.		P.		R.	
	10	4	10	4	10	4	10	4
<u>Score</u>								
2	59%	54%	77%	52%	57%	39%	37%	23%
1	32%	31%	5%	23%	33%	37%	34%	43%
0	10%	18%	18%	25%	10%	25%	29%	34%

C.K. = Conditional Knowledge  
 E. = Evaluation  
 P. = Planning  
 R. = Regulation

In addition to these data, the researcher calculated a total percentage score for each individual survey based on a perfect paper being equivalent to a 40/40 score (20 questions with 2 possible points per question). From these data, a grade average score was calculated. Those data are indicated in Table III.

Table III

Grade Average Scores

<u>Grade 10</u>	<u>Grade 4</u>
<u>%Scores</u>	<u>%Scores</u>
42	37
55	42
58	45
58	50
61	55
61	58
66	58
74	61
79	66
82	66
82	74
84	76
84	76
92	
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<u>Grade Average Score= 70%</u>	<u>Grade Average Score= 59%</u>

## **Techniques Deaf Students Find Helpful in Facilitating Their Reading Comprehension (Research Question #2)**

Questions from the Index of Reading Awareness survey were used to infer techniques that deaf students find helpful in facilitating their reading comprehension.

The fourth graders found the use of context clues and the strategy of re-reading the text to be helpful. Reading "easy books" and those with pictures were preferred to aid their comprehension as well as asking for help.

The tenth graders reported that the use of context clues, checking their comprehension as they read, and re-reading the text were all helpful reading techniques. Using picture clues, creating movies in the mind to match the text, and asking others for help were also seen as beneficial.

## **Deaf Students' Conceptions Regarding the Characteristics of Proficient Readers (Research Question #3)**

Additional data were collected regarding deaf students' perceptions of the skills inherent in proficient readers. The

responses did not appear to be grade specific. When asked the question, "What makes a person a good reader?" fourth graders had a variety of replies. The fourth graders replies were as follows:

Replies:

- \* A person is a good reader when the teacher helps them
- \* Good readers are people who can read fast
- \* Good readers need a lot of practice
- \* Good readers are people who study a lot
- \* Good readers start by reading easy books and then they read harder books
- \* Good readers are people who know many words
- \* Good readers are people who read a lot
- \* Good readers are people with skills and who practice
- \* Good readers read a lot and know a lot of words
- \* Good readers are people who read carefully and slowly
- \* The amount of books they read makes a person a good reader
- \* Good readers read a lot

- \* A person who practices every day is a good reader

The tenth graders responses to the identical question were as follows:

- \* Good readers are people who are interested in reading and practice a lot
- \* Good readers are people who read almost all of the time. They have a high vocabulary knowledge and high English skills.
- \* Good readers read short stories twice and start reading when they are little kids
- \* Good readers take their time to understand the vocabulary words and try to picture everything in the story
- \* Good readers know many words and have good English skills
- \* Good readers understand most vocabulary. They have good patience and read continuously without giving up
- \* Good readers like to read everything
- \* A good reader loves and respects books. They are willing to read slowly or carefully to understand the story
- \* A good reader is someone who has high vocabulary and patience

- \* A good reader understands what they are reading
- \* Good readers read at their own pace and do not try to skip words. They don't hurry but read everything to make sure they understand the story.
- \* Good readers try very hard and know a lot of words
- \* A good reader is someone who reads a lot. They try to understand what they read and can discuss what they have read.
- \* Good readers practice vocabulary and remember many words

Deaf students' perceptions of the characteristics of proficient readers did not appear to be grade specific. In fact, their responses were very similar. According to the deaf students in both grades, proficient readers are those who have a strong command of vocabulary and who enjoy the reading process. Proficient readers were perceived to be those who take their time reading, who read often, and those who are diligent in their efforts.

## Summary

In order to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers, the data in this study were analyzed both descriptively and numerically.

## **Chapter V**

### **Conclusions and Implications**

#### **Purpose**

The purpose of this study was to gain insight into deaf students' awareness of the skills and strategies they utilize during the reading process and those they feel are inherent in proficient readers.

#### **Conclusions**

Using the Index of Reading Awareness (IRA) as a guide to determine the students' level of metacognitive awareness when reading, various conclusions were drawn. Answers to the questions raised in the study were also formulated.

Based on the data obtained, it was shown that the level of deaf students' metacognitive reading awareness increased with age. In this particular study, the average percentage scores for grades four and ten on the IRA (shown in Table III)

increased from an average of 59% in the fourth grade to 70% in the tenth grade. Fourth grade deaf students showed a greater awareness and mastery of conditional knowledge skills than the tenth graders. However, the tenth graders excelled in the area of evaluation while both groups were weak in the area of regulation.

Deaf students' perceptions of the characteristics of proficient readers were very similar and appeared to span the grade/age range. In summary, deaf students feel that proficient readers are those who possess a high level of vocabulary knowledge and who enjoy reading. Proficient readers were perceived to be those who read slowly, often, and are persistent in their efforts.

When answering the additional question added by the researcher, "What is the hardest part about reading for you?", the students in both the tenth and fourth grades almost unanimously answered that the hardest part about reading involved "the words" or "the vocabulary." One student responded that poetry was the hardest part while another

responded that long sentences gave him/her trouble. Combining the results from this question along with their perceptions regarding proficient readers, the conclusion was drawn that deaf students perceive the ability to read proficiently to center on having a good knowledge of vocabulary. Thus, they view their difficulties with the reading process as stemming from their limited mastery of vocabulary.

### **Implications for Classroom Practice**

As a builder must utilize many tools to complete a specific construction task, so must a reader utilize many specific strategies during the varied tasks involved in proficient reading. In the case of the builder, if he possesses limited amounts of materials and tools and does not have a blueprint or the knowledge of how to use the tools at his disposal, his success will be very limited. Likewise, a reader who possesses limited reading strategies and skills and is

unaware of how to apply them to the reading process, will also experience a low degree of success. Knowing which skills and strategies student readers carry in their "tool belt" is very important for the classroom teacher.

One method for obtaining such information was presented in this study. The use of the Index of Reading Awareness (IRA) to assess students' metacognitive awareness would give educators the needed insight as to how their students approach the reading process. Struggling readers may not be proficient but they do possess skills and strategies that they utilize as they read. Before instruction begins, educators need to know what the reader possesses and how they apply it to the task at hand. Poor readers need to have instruction time tailor made to minister to their individual difficulties. The educator needs to learn which tools the student possesses, how these tools are used, and if the student is aware of how they are or are not to be used. Utilizing the IRA in the classroom would give the educator the necessary insight to provide for better

instruction in these areas, thus better meeting the needs of the students.

For example, regulation was shown to be an area of weakness for the students involved in this study. The students surveyed showed a lack of, or an inability to monitor and redirect their efforts during the course of reading. Knowing this, a teacher could focus on methods of teaching and reinforcing these skills. A teacher who focused on instructing these same students to know when and why reading strategies are applied or on how to appraise the task at hand would be wasting their instruction time for these areas of conditional knowledge and evaluation were shown to be areas of strength for the surveyed students.

The IRA could be a valuable tool for educators in general and especially for educators of deaf students. Gaining a level of proficiency in the English language is often a difficult task for deaf individuals. English is not their native language and mastery of it is made more difficult by their inability to hear.

Using the IRA to direct the educator to areas of difficulty for the student would save valuable instruction time that could be used to bridge the gap between the native language of American Sign and the second language of English.

During instruction time, it would be very helpful for classroom teachers to be working toward a common goal with their students. Educators are often so involved with what needs to be accomplished and the methods to achieve success, that they lose sight of the perceptions of the student with whom they are working. Students with a misguided perception as to the skills needed to become a proficient reader will be striving to perfect potentially inappropriate and unnecessary skills. In the process, they will be wasting valuable time and effort. In the case of this study, the students perceived proficient readers to be those who have a well developed vocabulary. Their entire focus for becoming better readers centered on increasing their knowledge of words. Such a narrow view of what is involved in the reading

process must be changed. Learning of this perception, teachers would be given the opportunity to evaluate their methods of instruction to ensure such a perception is not fostered or encouraged. They would also be able to take the necessary steps to broaden their students' understanding of the reading process. With such knowledge, educators could establish quality reading role models and openly discuss the characteristics that deem them as such, thus giving the students guidelines to follow to aid in improving their own reading ability levels and the development of personal reading strategies.

### **Implications for Research**

Additional research is needed to account for the hearing status of the subjects' parents. Such research is needed to determine if the level of metacognitive awareness of the reading process and the perceptions of the characteristics inherent in proficient readers of deaf students of deaf parents differs in any way from that of deaf students of hearing parents.

In further studies, research is needed to account for the type of school the subjects attended. Additional research is needed to compare the results gained from students attending a residential school for the deaf as opposed to a mainstream setting.

The type of communication used by the individual students is a potentially important factor. Additional research is needed to compare the results gained from students using different forms of manual communication eg.: American Sign Language, Pidgin Sign, or Signing Exact English.

In additional studies the effect of direct instruction of

metacognitive strategies should be addressed. Further research is needed to determine if direct instruction has an impact on the students' level of metacognitive awareness.

Additional research is needed to compare the scores of the IRA surveys to the individual reading abilities of the subjects. Further research is needed to determine if a higher score on the IRA indicates an increased reading proficiency of the subject.

Written English is often not the natural language for deaf individuals. Additional research is warranted to determine the degree to which deaf students' reading difficulties reflect a lack of metacognitive awareness or merely reflect the difficulties of reading in a second language.

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Appendix A  
Letter to the Teachers

Dear (teacher name),

I am a graduate student at S.U.N.Y. College at Brockport. I am currently involved in conducting research for my thesis in the area of deaf students' metacognitive awareness of the reading process and their perceptions of the characteristics they feel are inherent in proficient readers.

To conduct my research, I am utilizing a 21 question survey aimed at collecting this information. I would greatly appreciate your willingness to administer the accompanying survey with letter of introduction to your students. The students may answer the questions independently or through sign interpretation.

Please return the completed surveys to me by \_\_\_\_\_. I have enclosed a stamped, self-addressed envelope for your convenience.

Thank you for your time and willingness to be involved in my project.

Sincerely,  
Suzanne Shafer

Appendix B  
Letter of Introduction

Dear Students,

I am a teacher of the deaf working in the Brockport School District. I am currently involved in completing my final project to obtain my Master's Degree. My project is based on finding out what deaf students do and think about when they read. I am also curious to find out what deaf students think makes a person a good reader.

Your teacher has agreed to help me by allowing you to complete a short survey. These surveys will not be graded. Please read each question and choose the answer that best describes you as a reader. Feel free to have the questions and answers interpreted for you. When you are all finished, your teacher will mail the surveys back to me. Thank you for helping me with my project!

Sincerely,

Suzanne Shafer

Appendix C  
Index of Reading Awareness

Reading Survey

1. Which of these is the best way to remember a story?
  - a. Repeat every word
  - b. Think about remembering it.
  - c. Write it in your own words.
  
2. If you are reading for science or social studies, what would you do to remember the information?
  - a. Ask yourself questions about important ideas.
  - b. Skip the parts you do not understand.
  - c. Concentrate and try hard to remember it.
  
3. What do you do if you come to a word and you do not know what it means?
  - a. Use the words around it to figure it out.
  - b. Ask someone else.
  - c. Move to the next word.
  
4. If you could read only some of the sentences in the story because you were in a hurry, which ones would you read?
  - a. The sentences in the middle of the story.
  - b. The sentences that tell the most about the story.
  - c. The interesting, exciting sentences.
  
5. Why do you go back and read things over?
  - a. It is good practice.
  - b. You did not understand it.
  - c. You forgot some words.

6. What would help you to become a better reader?
  - a. More people helping when you read.
  - b. Reading easier books with shorter words.
  - c. Checking to make sure you understand what you read.
  
7. What do you do if you do not know what a whole sentence means?
  - a. Read it again.
  - b. Sound out all of the words.
  - c. Think about the other sentences in the paragraph.
  
8. What is special about the first sentence or two in a story?
  - a. They always begin with "Once upon a time..."
  - b. The first sentences are the most interesting.
  - c. They often tell what the story is about.
  
9. If the teacher told you to read a story to remember the general meaning, what would you do?
  - a. Skim through the story to find the main parts.
  - b. Read all of the story and try to remember everything.
  - c. Read the story and remember all of the words.
  
10. How can you tell which sentences are the most important ones in a story?
  - a. They are the ones that tell the most about the characters and what happens.
  - b. They are the most interesting ones.
  - c. All of them are important.
  
11. How are the last sentences of a story special?
  - a. They are the exciting, action sentences.
  - b. They tell what happened.
  - c. They are harder to read.

12. When you tell other people about what you read, what do you tell them?
- What happened in the story.
  - The number of pages in the book.
  - Who the characters are.
13. If you had to read fast and could only read some words, which ones would you try to read?
- The new vocabulary words, because they are important.
  - The words you could pronounce, (or have seen before)
  - The words that tell you the most about the story.
14. If you are reading a library book to write a book report, which would help you the most?
- Sound out words you do not know.
  - Write it down in your own words.
  - Skip the parts you do not understand.
15. If you are reading for a test, which would help you the most?
- Read the story as many times as possible.
  - Talk about it with somebody to make sure you understand it.
  - Repeat the sentences.
16. What parts of the story do you skip as you read?
- The hard words and parts you do not understand.
  - The unimportant parts that do not mean anything for the story.
  - You never skip anything.

17. What is the hardest part about reading for you?

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18. If you are reading a story for fun, what would you do?

- a. Look at the pictures to get the meaning.
- b. Read the story as fast as you can.
- c. Imagine the story like a movie in your mind.

19. Before you start to read, what kind of plans do you make to help you read better?

- a. You do not make any plans, you just start reading.
- b. You choose a comfortable place.
- c. You think about why you are reading.

20. What things do you read faster than others?

- a. Books that are easy to read.
- b. Stories that you have read before.
- c. Books that have a lot of pictures.

English Language

What makes a person a good reader? (Describe a person who is a good reader)

Appendix D  
Key to the Index of Reading Awareness

- |                          |                           |
|--------------------------|---------------------------|
| 1. Conditional Knowledge | 2. Conditional Knowledge  |
| a. 0                     | a. 2                      |
| b. 1                     | b. 0                      |
| c. 2                     | c. 1                      |
| 3. Regulation            | 4. Planning               |
| a. 2                     | a. 0                      |
| b. 1                     | b. 2                      |
| c. 0                     | c. 1                      |
| 5. Regulation            | 6. Evaluation             |
| a. 1                     | a. 1                      |
| b. 2                     | b. 0                      |
| c. 0                     | c. 2                      |
| 7. Regulation            | 8. Evaluation             |
| a. 1                     | a. 1                      |
| b. 0                     | b. 0                      |
| c. 2                     | c. 2                      |
| 9. Planning              | 10. Evaluation            |
| a. 2                     | a. 2                      |
| b. 1                     | b. 1                      |
| c. 0                     | c. 0                      |
| 11. Evaluation           | 12. Planning              |
| a. 1                     | a. 2                      |
| b. 2                     | b. 0                      |
| c. 0                     | c. 1                      |
| 13. Planning             | 14. Conditional Knowledge |
| a. 1                     | a. 1                      |
| b. 0                     | b. 2                      |
| c. 2                     | c. 0                      |

15. Conditional Knowledge

- a. 1
- b. 2
- c. 0

16. Regulation

- a. 1
- b. 2
- c. 0

17. Evaluation

- a. 1
- b. 2
- c. 0

18. Conditional Knowledge

- a. 1
- b. 0
- c. 2

19. Planning

- a. 0
- b. 1
- c. 2

20. Regulation

- a. 1
- b. 2
- c. 0