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ABSTRACT

A project explored the reading comprehension skills and strategies of adult basic education (ABE) students. The target population was 55 students from 2 ABE programs in central Pennsylvania. They responded in interviews to a questionnaire that measured their knowledge about reading and reading comprehension strategies, and they participated in read-aloud sessions that allowed an examination of their abilities to use comprehension strategies. The results indicated that many of the students know about the importance of comprehension in reading and know about sound strategies to enhance comprehension. In addition, many could apply sound comprehension strategies successfully in reading situations. Implications for instruction were that although students already know about reading comprehension and strategies, it may help to inform students directly about the variables that influence reading and to discuss strategies with them, as well as to increase students' abilities to detect when they fail to understand. Based on results of the project, two workshops were conducted for ABE teachers and results also were disseminated through the Pennsylvania Department of Education. (Five project appendixes include the following: reading questionnaire; reading passages used; and coding categories for open-ended questions from the reading questionnaire, for read-aloud sessions, and for post-reading interviews.) (KC)

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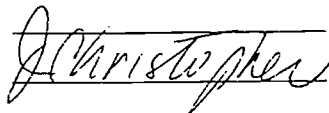
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## Exploring the Comprehension Skills and Strategies of ABE Students

### Final Report

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### Abstract

This project explored the reading comprehension skills and strategies of ABE students. Little research has been conducted on the comprehension skills and strategies of the ABE population. Such research is necessary in order to lay the foundation for the development of sound instructional techniques geared toward this population. Fifty-five students from two ABE programs in central Pennsylvania participated in the study. They responded to a questionnaire that measured their knowledge about reading and reading comprehension strategies, and participated in read-aloud sessions that allowed an examination of their abilities to use comprehension strategies. The results indicated that many of the students know about the importance of comprehension in reading and know about sound strategies to enhance their comprehension. Furthermore, many could apply sound comprehension strategies successfully in reading situations. Implications for instruction were generated. A description of the project, the results, and instructional implications were presented to teachers via workshops at the participating sites. The results of the research project and the responses of the teachers indicate that further basic research into the comprehension skills and strategies of ABE students, and applied research into the development of instructional approaches for teaching comprehension strategies, are warranted. This report is designed for program administrators and teachers working in ABE programs. It summarizes project activities, findings, instructional implications, and teacher reactions to the project.

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## **Introduction**

The goal of this project was to conduct exploratory research on the reading comprehension skills and strategies of ABE students who score at the 5th to 8th grade reading level on standardized tests. While much research has been done on the comprehension skills and strategies of proficient readers (usually college students) and young children, little is known about the comprehension skills and strategies of the ABE student population.

### **Purpose and Objectives**

The purpose of the project was to fill the need for research into the comprehension skills and strategies of ABE students. It was thought that such an investigation would be beneficial because it would be a first step toward developing a profile of the ABE population as comprehenders, which could eventually be compared to that of proficient readers. In addition, the profile could eventually be used to develop instructional interventions designed to improve the comprehension skills and strategies of the ABE population.

The project objectives were:

1. Develop materials and procedures to interview ABE students regarding their comprehension skills and strategies;
2. Interview approximately 30 ABE students (reading at the 5th to 8th grade level);
3. Analyze interview data;
4. Draw conclusions and generate instructional implications;
5. Develop and present a workshop for teachers from participating sites at the Penn State University Park Campus;

6. Disseminate findings, instructional implications, workshop and materials through state ABE/literacy networks and nationally.

### **Background and Rationale for the Project**

Researchers have long studied the reading comprehension skills and strategies of proficient readers and developing young readers. The skills and strategies of proficient readers are studied to provide a profile of what normal, skilled reading looks like. This profile, in turn, can serve as a goal that can be strived for in instructional practice: if we know where we are headed, it may help us figure out how best to get there. Researchers have also studied the skills and strategies of developing young readers to learn "what happens when?," in the hopes that the information gleaned from such studies can be used to guide the development of instructional practice. The research has focused on two aspects of comprehension skill: readers' ability to detect when they fail to understand while reading, and, to a lesser extent, what they do in such situations to repair their understanding.

Researchers have also studied knowledge about reading in general, and knowledge about reading comprehension skills and strategies in particular. It seems to make sense intuitively that if people can list factors that might make reading more difficult for them (for example, a topic they know little about or a text written in small print), or can describe strategies (like rereading) that they would use when faced with a reading difficulty, then they should be able to apply that knowledge in a reading situation. While it has not been established that an individual's knowledge, or lack of it, about variables affecting reading influences his or her reading

comprehension ability, this has been another main line of reading comprehension research.

**Research on Knowledge About Reading.** Previous research has indicated that there are differences, depending on age and reading skill, in people's knowledge about reading in general and comprehension skills and strategies in particular. Generally, younger and poorer readers are less likely than older and better readers to understand that the goal of reading is comprehension. They are less likely to understand how aspects of texts and tasks influence reading difficulty. And, they are less knowledgeable about appropriate and effective comprehension strategies.

For example, Myers and Paris (1978) examined how younger and older children answered questions that tapped their knowledge about aspects of reading. They asked second and sixth graders a series of open-ended questions that explored their knowledge about how their own personal abilities and aspects of texts and tasks would influence their reading. They asked the children questions such as these: "What makes someone a really good reader;" and "One day I asked Jim to read a story that was five pages long while Tom read a story that was two pages long. Which boy took the longest to read the story? Who do you think remembered the most?" They also asked the children questions that tapped into their knowledge about comprehension strategies, such as: "What do you do if you don't understand a word you read?" The researchers found that the younger children tended to be less knowledgeable about specific characteristics of good readers and about how aspects of a text or task might influence their abilities to read or the strategies they should use to read it. They were also less

knowledgeable about strategies they could use when they failed to understand or had some type of difficulties with a task.

Garner and Kraus (1981-1982) looked at good/poor reader differences in reading knowledge among children of the same age. They asked questions of 7th grade readers (classified as either "good" or "poor" readers) including the following: "What things does a person have to do to be a good reader;" "If I gave you something to read right now, how would you know if you were reading it well;" and "What makes something difficult to read?". They found that good readers' answers focused on the importance of understanding, while poor readers' answers focused on aspects of the texts or technical aspects of reading. For example, good readers tended to give answers like the following to question one: "Understand what you're reading," or "Picture things in your mind to help you understand them." Poor readers, on the other hand, tended to give answers such as these to the same question: "Pronounce the words right," or "Know all of the words."

Gambrell and Heathington (1981) adapted a questionnaire similar to the one designed by Myers and Paris (1978) for use with proficient college student readers and adult students enrolled in a community literacy program. They looked at the participants' knowledge of task and strategy variables that influence reading. They found that the college student readers were sensitive to task and strategy variables that influence reading. The responses of the adult students indicated that they were sensitive to some task influences, like motivation, interest and prior knowledge. They were not



sensitive to strategy variables or to how the use of strategies can enhance reading comprehension.

**Research on Comprehension Skills and Strategies.** Previous research has also revealed that younger and poorer readers are less likely to detect when they fail to understand something while reading. This has been studied with a technique called the "error detection paradigm." In the error detection paradigm, people are asked to read passages that have confusions intentionally written into them: for example, there may be a sentence with a scrambled word order. Readers may or may not be told ahead of time that the confusions exist. It is assumed that readers who are carefully monitoring their understanding will easily detect the confusion. Researchers look at the number of errors the readers detect, and often, their explanations of how the confusions cause problems. Typically, even when proficient readers are told that problems exist, error detection rates are low.

In a study typical of those using the error detection paradigm, Markman (1979) had children in 3rd, 5th, and 6th grades read passages with inconsistent information. The researcher asked the children to rate the comprehensibility of the passages. Children were not warned ahead of time that the problems existed. Even the oldest children judged many essays containing inconsistent information to be comprehensible. Markman repeated the study with a new group of same-aged children, telling them that inconsistencies might be present in some of the passages. The majority of the children still did not detect the inconsistencies.

Proficient adult readers also have problems detecting confusions in text. Baker and Anderson (1982) had college students read

passages with inconsistencies embedded in them. Half of the readers were warned ahead of time that the inconsistencies were present. There was no difference between the groups in how many inconsistencies were detected: only about one-third of the inconsistencies were detected.

Even though there are differences between good and poor readers, and between younger and older readers in the ability to detect text errors, there is conflicting evidence concerning the influence of these differences on the ability to use appropriate and effective repair strategies. Strategy use is examined by asking readers to think aloud as they read and apply strategies, or by asking readers, immediately after they finish reading something, to report strategy that they used during the reading episode. For example, Olshavsky (1976-1977) asked good and poor 10th grade readers to read passages, stopping at certain points to tell her what they were thinking and doing as they read. Some of the points were located at passages that were abstract and extremely difficult to read. Olshavsky found that while good and poor readers used the same strategies, good readers tended to use them more. The strategies the readers used included rereading, using context to define an unknown word, and recalling information they already knew about a topic. Other studies, however, have shown that use of strategies is not related to reading ability (Clark, Forlizzi, Ward, & Brubaker, 1988).

**Rationale for the Project.** In summary, readers' knowledge about reading and comprehension strategies, the ability to detect failures to understand, and the ability to use strategies to repair comprehension failure once it occurs have been studied in proficient adult readers and

developing young readers. These studies have shown that age and ability influence many variables related to reading comprehension. However, very little parallel research has been conducted with developing adult readers: those who comprise the ABE population. Since sound instructional practice is grounded in research activities, parallel research with the ABE student population should be conducted. This exploratory project was a first step toward the development of such a program of research.

The methods and procedures used previously in research on knowledge about reading and in research on comprehension skills and strategies were adapted for use in this project. As part of the study, ABE students responded to a questionnaire designed to tap into their knowledge about reading in general and reading comprehension skills and strategies in particular. The questionnaire was modeled on those developed by Myers and Paris (1978), Garner and Kraus (1981-1982), and Gambrell and Heathington (1981). The error detection paradigm was used to determine the extent to which the participants could identify errors in text. In addition, participants were asked to report repair strategies they used in response to problems.

### **Time Frame**

The research project was conducted from the period of July 1, 1991, to June 30, 1992. During the first project quarter, materials and procedures for interviewing ABE students were developed. During the second quarter, materials and procedures were pilot-tested with four students and materials and procedures were finalized. Twenty-three ABE students were interviewed. During the third quarter, data collected to that point were transcribed and coding and

scoring systems were set up. During the final project quarter, twenty-eight additional students were interviewed, additional data were coded and scored, preliminary analyses were completed, and instructional implications were identified. In addition, workshops were held for teachers at the participating sites. The goal of these workshops was three-fold: 1) to present the findings and instructional implications to teachers, 2) to allow teachers to evaluate the research project in terms of its ability to address their needs in the classroom; and 3) to solicit teachers' input into ideas for continuing this line of research, if useful, or other related useful lines of research. Analyses were completed, the final report was written, and dissemination activities continued during a two month period after the completion of the project period.

### **Audience**

This report is designed for program administrators and teachers working in ABE programs. Its intent is to describe how the project was conducted, summarize how the objectives were met, and inform program administrators and teachers of the findings and implications for instruction in reading comprehension for ABE students.

### **Project Staff and Key Personnel**

The project was conducted by Penn State University's Institute for the Study of Adult Literacy, which is under the direction of Dr. Eunice Askov. Dr. Askov was responsible for administering the project. Principal Investigator Lori Forlizzi conceptualized the research and was responsible for carrying out all project activities. The research was conducted with the assistance of two cooperating sites: Altoona Area School District's Community Education Center,

under the direction of Vince Nedimyer, and State College Area School District's Community Education program, under the direction of Nancy Desmond. Dr. Forlizzi worked with Mr. Nedimyer and Margaret Welliver, the Coordinator of Adult Basic and Literacy Education at State College Area School District's Community Education Program, to implement the research project at the sites. Ms. Welliver and Mr. Nedimyer served as the primary contacts at the sites. Karen Lesch, a counselor, and Barbara Berard, a teacher, were responsible for recruiting students to participate in the project at the State College site and at the Altoona site, respectively.

**Addresses Where Report May Be Obtained**

Copies of the final report may be borrowed from:

Division of Adult Basic and Literacy Education Programs  
 Pennsylvania Department of Education  
 333 Market Street  
 Harrisburg, PA 17126-0333

and from the Department of Education's adult education resource clearinghouse:

AdvancE  
 Pennsylvania Department of Education  
 PDE Resource Center  
 333 Market Street  
 Harrisburg, PA 17126-0333

**Statement of the Problem**

Educators have studied the reading knowledge, skills and strategies of proficient readers and developing young readers for several years, but there has been little parallel research on older

learners who are developing reading skills. The problem that this research project addressed is the lack of basic research on less proficient adult readers' knowledge about their comprehension skills and strategies and their basic abilities related to reading comprehension. What we know about proficient reading provides goals for instruction, and what we know about how youngsters learn to read drives the development of educational practice. We cannot assume, however, that knowledge about reading and progressions of development of skills and strategies are the same for adult students and young children. It is imperative to study the reading knowledge, skills and strategies of developing adult readers as a basis for developing instructional practices that will work for them.

As a first step toward such a program of research, fifty-five ABE students throughout Central Pennsylvania participated in a research project that examined 1) their knowledge about reading comprehension, themselves as comprehenders, and comprehension strategies; 2) their abilities to detect comprehension failure while reading; and 3) their abilities to use appropriate and effective strategies in response to comprehension failure. The following objectives were proposed:

1. Develop materials and procedures to interview ABE students regarding their comprehension skills and strategies;
2. Interview approximately 30 ABE students (reading at the 5th to 3th grade level);
3. Analyze interview data;
4. Draw conclusions and generate instructional implications;

5. Develop and present a workshop for teachers from participating sites at the Penn State University Park Campus;
6. Disseminate findings, instructional implications, workshop and materials through state ABE/literacy networks and nationally.

### **Procedures**

The following sections describe the procedures followed in achieving each objective. Objectives one (develop materials and procedures) and two (interview students) are discussed in the same section, as activities undertaken to meet them were closely related. Discussion of project evaluation activities is included in the same section as the discussion of activities carried out to meet objective 5 (develop and present a workshop for teachers from participating sites).

#### **Develop Materials, Procedures and Interview Students**

The questionnaire, target passages, and procedures were developed by the Principal Investigator (PI), then were pilot-tested with three students in Altoona and one in State College. Minor adaptations were made after piloting the materials and procedures. Fifty-one additional students were then interviewed. The materials, students and their recruitment, and procedures are described in the following sections.

**Materials.** A questionnaire, modeled after previous work by other researchers, was developed to tap some of the knowledge ABE students have about reading and themselves as readers, as well as knowledge they have about strategies they use to repair comprehension failures. The PI drafted the questionnaire, then

presented it to Margaret Welliver at State College and the teachers at the Community Education Center in Altoona, who offered some helpful suggestions for adapting the questionnaire to the ABE student population.

Part one of the questionnaire included three open-ended questions to measure students' general knowledge about three aspects of reading:

1. What makes someone a really good reader;
2. If I gave you something to read right now, how would you know if you were reading it well; and
3. What makes something difficult to read.

Part two measured students' knowledge about what they do when they are reading and come to a part that is confusing or difficult for them to understand (comprehension failure occurs). It presented students with two situations that they might encounter while reading: 1) they come to a sentence that doesn't fit with the other sentences they have just read; and 2) they come to a sentence that makes no sense. For each situation, a list of strategies that people might use in that situation was presented -- for example, "Reread the sentence that doesn't fit." Students were to respond by indicating how likely they were to use each strategy. Their answers could range from "never do" (0) to "almost always do" (4). The final version of the questionnaire is presented in Appendix A.

Three passages were selected to be used as target passages: a 283 word newspaper article on Democratic presidential candidates; a 279 word procedural text on how to give first aid; and a 265 word textbook-style passage that described the four basic food groups. A



195 word passage on the origin of the word "sandwich" was selected to be used as a warm-up passage. Passages were modified from their original condition to ensure that they were all written at the 5th or 6th grade level according to the Fry Readability Graph (Fry, 1968).

Each target passage was modified to produce two "problem" versions: one with a sentence with scrambled word order (for example, "The Democrats Kerrey joining the race are excited about") and one with a contradictory sentence (for example, "Don't talk to the victim, because it could get him excited," when earlier the passage had said that it was very important to keep talking to a victim in order to keep him calm). The warm-up passage and normal and problem versions of the target passages are presented in Appendix B. (The versions of each passage presented in the appendix are labeled and problem sentences are marked for ease of location by readers of this report. Labels were not included and problem sentences were not marked when passages were presented to ABE students in the study.)

**Recruitment of Students.** At State College, Karen Lesch contacted students who qualified for the study, and arranged meetings between the PI and students who were willing to participate in the research project. At Altoona, the PI visited the ABE/GED classroom at the Community Education Center where Barb Berard would check daily sign-in sheets to determine whether students in the target group for the study were present. She asked students if they would be willing to participate in the project. Those who indicated willingness met with the PI that day. In addition, the PI visited a satellite ABE/GED classroom located in the Head Start building nearby, where

several participants were recruited in the same manner. Students at both sites were paid \$8.00 for their participation in the study.

Two interviews with each of thirty ABE students were originally proposed (the first to focus on the questionnaire and the second on passage reading). After talking with the principal contacts at the cooperating sites in the beginning of the project period, it was decided that it would be more efficient to conduct one longer interview with each student, as ensuring the students would return for the second part of the interview might be difficult. With the permission of the Pennsylvania Department of Education, the PI was able to use funds originally earmarked for travel to be used instead as payment for additional participants. Eventually, a total of fifty-five ABE students (eight from State College and 47 from Altoona) participated in the project.

The target population originally proposed consisted of adult students reading at the 5th to 8th grade level, as measured by the reading portion of the Tests of Adult Basic Education. Because low numbers of students reading at the 5th and 6th grade levels were enrolled in both programs at the time of the study, students reading at the 9th grade level were included as well.

**Description of Participating Students.** The majority of the students who participated in the study were females: 39 participants, including all of the students who pilot-tested the materials, were females while the remaining 16 were males. Three of the pilot students were reading at the 6th grade level, while the fourth was reading at the 8th grade level. Of the remaining 51 who were interviewed, 37 were reading at the 5th to 8th grade level, and 12

were reading at the 8th to 9th grade level. One participant was reading the 4th grade level, while another was reading above the 9th grade level. Most of the students who participated in the study were preparing to take the test that would earn them the GED.

**Procedure for Interviews.** Each student was interviewed individually by the PI in a quiet area nearby or within his or her classroom. Interviews typically lasted 45 minutes to one hour. Each interview was audio taped. Each student completed the reading questionnaire, then read aloud and discussed with the PI three target passages, two of which had problem sentences embedded in them. One problem passage had a scrambled sentence in it: the other, a contradictory sentence. Across students, normal and problem versions of each passage were presented an approximately equal number of times, and equally often (approximately) in each position in order. Thus, students did not all receive the same version of each passage, nor did they read the passages in the same order. For example, one student might receive the normal version of the democrats passage, the scrambled sentence version of the food groups passage, then the inconsistent sentence version of the first aid passage, while the next student read the scrambled sentence version of the first aid passage, the normal version of the food groups passage, then the inconsistent version of the democrats passage. Students were not told ahead of time that problems existed in some of the passages.

The interview began with the PI explaining the study and getting the student's consent to participate. The PI was careful to make sure that participants understood that the purpose of the study was not to

assess their comprehension abilities. The study was presented as an opportunity for the students as well as the PI to investigate their knowledge and beliefs about reading in general and comprehension in particular, and to learn more about what goes on as they read.

The PI assisted each student in filling out the reading questionnaire. She read the questions aloud and marked student responses on a copy of the questionnaire. For the initial three open-ended questions, student responses were recorded on audio tape only.

The PI then explained that the student would be asked to read some different kinds of passages aloud, as he or she normally would to get a general understanding of a text. As much time could be taken as necessary. The PI stressed that the student would not be asked to remember the passage or answer questions about it. The warm-up passage was introduced to the student by the PI to allow the student to become accustomed to reading aloud in front of the PI and to allow the PI to explain and demonstrate the procedures. After any student questions were answered, the student read the first target passage and responded to a series of post-reading questions. The questions had two purposes: 1) to allow the PI to determine whether or not the student had detected the target problem, if one existed in the passage (conceivably, the student could have seen the problem while reading but not have mentioned it); and 2) to allow the PI to determine what a student had done in response to a detected problem. Immediately after the student finished reading the target passage, the PI asked, "Did anything in that passage seem confusing or difficult to understand?" The PI recorded all student responses to the question, regardless of whether they related to the target problems. If the

student mentioned any problems, for each problem the PI asked what he or she remembered thinking and doing the first time he or she came to the problem sentence while reading. If target problems were not spontaneously pointed out by the student, the PI pointed them out to the student and asked if he or she had seen them while reading the passage. If the student had seen the problem, the PI asked him or her to discuss what he or she remembered thinking and doing at the site of the problem. The read aloud procedure and questions were then repeated for the two remaining target passages.

Students were thanked and paid for their participation before they left the session.

#### **Analyze Interview Data**

Student responses to the open-ended questions on the reading questionnaire were transcribed. Categories (displayed in Appendix C) were set up and were used to code student responses. Many students gave more than one response to the questions, and all responses were coded.

The PI listened to audio tapes of the read aloud sessions on passages that contained target problems to determine whether or not students had detected target problems while reading. Strategies that the students used at the site of each problem were coded. For example, if a student reread a target problem sentence, he or she received a mark under the category "reread." The categories used to code the read aloud sessions are shown in Appendix D.

Post reading interviews on passages that included target problems were transcribed. The transcripts were examined to determine whether students had noted problems after they finished

reading. Strategies students described using at the site of the target problems were coded in a manner similar to that in which strategy use during reading was coded. For example, if a student said that he or she remembered rereading at the site of a target problem, he or she received a mark under the category "reread." The categories used to code the post-reading interviews are shown in Appendix E.

Data from 47 of the 55 students who participated in the study were included in the analyses. The data from the four pilot students were not included in the analyses. Data from two participants who were reading outside of the 5th to 9th grade level target range and were not included in the analyses. Data from one non-native-born student, and from a student who had some problems with stuttering, were not included.

**The Reading Questionnaire.** The majority of student responses to open-ended question one, "What do you think makes someone a really good reader," fell into three categories: practice, which included reading often, or reading in different situations; global comprehension, or understanding whatever was being read; and personal motivation, which included liking books, reading or learning. Twenty-five students (53%) mentioned answers that fell into the practice category; 16 (34%) mentioned answers that fell into the global comprehension category; and 14 (30%) mentioned answers that fell into the personal motivation category.

The majority of student responses to open-ended question two, "If I gave you something to read right now, how would you know if you were reading it well," fell into one category: global understanding, which indicated that if they understood what they were reading, they

would know that they were reading it well. Twenty-one students (45%) mentioned answers that fell into this category. Eight students (17%) said that they didn't know how they would know if they were reading something well.

The majority of student responses to open-ended question three, "What do you think makes something difficult to read," fell into the category called reader/text interaction: word level, which indicated that if there were words in a text that students had a problem understanding or pronouncing, they would consider it difficult to read. Twenty-nine students (62%) gave responses that fell into this category. Nineteen students (40%) gave responses that fell into the reader/text interaction: text level category, which indicated that they thought that texts that didn't interest them, that they had no prior knowledge about, or that were difficult for them to understand, would be difficult for them to read. Fifteen (32%) gave responses that fell into the text category: responses which indicated that aspects of a text itself (small print or poorly organized text) would make it difficult for them to read.

Responses to the second part of the reading questionnaire were examined to determine whether students said they would use appropriate strategies in two situations where they experienced failure to comprehend. For the first situation presented, "you are reading and come to a sentence that doesn't fit with the other sentences you've just read," the PI examined student responses regarding four strategies presented on the questionnaire: reread the sentence that doesn't fit; reread the sentences that came before the sentence that doesn't fit; think back to what it said before the sentence that doesn't

fit; and think about something you knew before you started reading to help you figure out the sentence that doesn't fit. These four were selected for examination because they are appropriate and effective repair strategies to use in such a reading situation. Twenty-five of the 47 students, or 53%, said they would often or almost always use two or more of these strategies in this reading situation. Thus, over half of the students said they were likely to use appropriate strategies to deal with this reading situation. For the second situation presented, "you are reading and come to a sentence that is mixed up and makes no sense," the PI examined student responses regarding two strategies presented on the questionnaire: reread the confusing sentence, and reread the sentences that came before the confusing sentence. Sixteen out of the 47 students, or 34%, said they would often or almost always use these two strategies when they found themselves in this reading situation. Thus, about one third of the students said they were likely to use appropriate strategies to deal with this reading situation. Nineteen out of 47 students responded "do often" or "almost always do" to four of these six strategies, thus can be considered knowledgeable about appropriate strategies to use in these two situations.

When viewed in light of previous research, especially the work of Gambrell & Heathington (1981), the present results regarding ABE student knowledge about reading and reading comprehension strategies are encouraging but show room for improvement. In response to each question, roughly one-third or more of the respondents gave answers indicating an appreciation of the



importance of comprehension and a knowledge of sound comprehension strategies.

**Detection of Target Problems.** Each student who participated in the study was asked to read one passage that contained a scrambled sentence and one that contained a contradictory sentence. The following paragraphs report detection rates for scrambled sentences and contradictory sentences, respectively.

Thirty-one out of the 47 students, or 66%, detected the scrambled sentence in the passages they read. Eight students noted scrambled sentences in the passages they read spontaneously during the reading episode. Ten noted the scrambled sentence when the PI asked them, upon completing the passage, if they had seen anything that was confusing or difficult to understand in the passage. The responses given by thirteen students, after the PI had pointed out the scrambled sentence, indicated that they had detected the scrambled sentence while reading. The responses of twelve students indicated that they had not detected the scrambled sentence while reading, while the responses given by four students did not allow the PI to confidently determine whether or not they had detected the scrambled sentence while reading the passage.

The detection rate was not quite so high for the contradictory sentences. Sixteen out of 46 students, or 35%, detected the contradictory sentence in the passage they read. None of the students noted contradictory sentences spontaneously during reading episodes. Five noted the contradictory sentence when the PI queried them about confusing or difficult aspects of the passage. The responses given by eleven students, after the PI had pointed out the

contradictory sentences, indicated that they had detected the contradictory sentence while reading. Twenty-six students gave responses indicating that they had not detected the contradictory sentence while reading. The responses given by four students did not allow the PI to confidently determine whether or not they had detected the contradictory sentence while reading the passage. One student did not point out the contradiction in the passage she read, and the PI neglected to probe her about it, so it could not be determined whether or not this student detected the contradictory sentence she read.

The results regarding ABE students' abilities to detect failures to comprehend while reading are encouraging, especially since evidence shows that often even good readers do not detect failure to comprehend (Baker & Anderson, 1982).

**Strategy Use.** The PI examined the strategies used by the sixteen students who detected inconsistent sentences and the thirty-one students who detected scrambled sentences. The strategies these participants appeared to use while reading the problem sentences aloud, and the strategies they reported using in their post-reading interviews, were examined.

Rereading scrambled sentences, hesitating while reading them, and attempting to fix them up (usually by reordering words) were the strategies most used by participants as they detected and attempted to deal with those sentences. Not surprisingly, most detectors of scrambled sentences appeared to hesitate as they read them aloud (28 out of 31, or 90%). Twenty-three out of 31, or 74%, reread the scrambled sentences aloud. In the post-reading interviews on

passages that contained scrambled sentences, thirteen of the 31, or 42%, reported fixing or trying to fix the scrambled sentences.

Thinking back to information presented before a contradictory sentence was the strategy most used by participants as they detected and attempted to deal with the those sentences. Only six of the 16 detectors of inconsistent sentences appeared to use any strategies while reading aloud (strategies noted by the PI were rereading and hesitating). In the post-reading interviews, fifteen of the 16 (94%) reported thinking back to verify the inconsistency (for example, remembering that the passage said it is very important to keep talking to a victim, while reading that those providing first aid should not talk to the victim). Five of the 16, or 31%, reported trying to resolve the inconsistency. For example, they reported that they figured that someone providing first aid to an injured person should talk to the victim, but not about the seriousness of his or her injuries.

Thus, from observations of students as they read and from students' own reports, it appears that those who detected problems in passages they read used effective strategies in dealing with the problems. While roughly one-third of the detectors reported spending some time trying to resolve problems once they were detected, most apparently disregarded the problems once they had verified their existence.

### **Draw Conclusions and Generate**

### **Instructional Implications**

This pilot study explored ABE students' knowledge and abilities related to reading comprehension. The results shed a positive light their knowledge and abilities. It appears that many of the students

who participated in this study know about the importance of comprehension and ways to achieve it. Furthermore, in reading situations many participants enacted successful strategies that enhanced their comprehension.

However, the study also indicates that there is room for improvement in ABE students' knowledge and skills regarding reading comprehension. From the results, it appears that increasing students' knowledge about reading variables and strategies is one area that should be targeted. While it has not been conclusively established that individuals who know more about reading variables and strategies are necessarily better at applying that knowledge, it may help to inform students directly about the variables that influence reading. It may help to inform students explicitly about sound comprehension strategies and to discuss with them strategies that are appropriate to apply in certain situations. Furthermore, it appears that attempts to develop students' abilities to detect when they fail to understand are warranted. Instructional strategies that enhance such knowledge and abilities should be developed.

#### **Present Teacher Workshop and Evaluate Project**

During the last quarter of the project, the PI presented workshops for teachers at the two participating sites. Although a single workshop at the University Park Campus of Penn State for both groups of teachers was originally proposed, enough travel funds were left over to enable the PI to present a separate workshop at each site. This was more convenient for the teachers involved. In the workshops, the PI described the project and presented findings and instructional implications. In addition, teachers in these sessions

were asked to evaluate the research project in terms of how well it addressed needs in their classrooms and to discuss directions for further research.

The first workshop was held at the State College Area School District Community Education Program on May 8, 1992. Seven individuals participated in the workshop: the Adult Basic and Literacy Education Coordinator, four teachers, a counselor and one guest. The PI presented the rationale for the project, the materials and procedures, and summarized the preliminary results. Discussion of the results of the reading questionnaire led into a discussion of students' self-esteem and perceptions of themselves as learners. The participants noted that their classroom experiences had led them to believe that these variables are very important to reading. The participants agreed that instructional activities should be designed to build students' self-confidence and bolster their perceptions of themselves as learners, in addition to giving them knowledge and skills to help them become better comprehenders. Participants noted that instructional activities should include group activities, writing, and spelling development. Most participants agreed that developing knowledge and skills about reading comprehension would have the benefit of improving students' self esteem and help them perceive themselves as proficient readers and learners.

The second workshop was held at Altoona School District's Community Education Center on June 1, 1992. Seven individuals participated in this workshop: five teachers, an adult literacy service provider, and a counselor. After the PI presented basic information about the project, results, and instructional implications, participants

discussed what students are required to do in their reading in the classroom and real life. They noted that in the classroom it is important for students to remember what they read and be able to answer questions about their reading. The participants felt that the present research could be extended to address these types of reading situations, and said that they would be willing to work with the PI on such extensions.

### **Disseminate Findings and Products**

Other dissemination activities beyond the teacher workshops and submission of this final report to the Pennsylvania Department of Education and AdvancE are ongoing. The PI will present the project at the Pennsylvania Department of Education 1992 Fall Workshops and at the PAACE conference to be held in February, 1993. In addition, the PI will present the results of the project at the annual meeting of the National Reading Conference in December, 1992, in San Antonio, TX.

### **Conclusions and Recommendations**

The results of this pilot research study indicate that further work towards examining and improving ABE students' knowledge and skills relating to reading comprehension is both desirable and feasible.

There is room for much more basic research that would allow the development of a complete profile of the knowledge and skills of ABE students. This study opened up many questions that deserve pursuit. For example, do relationships exist between knowledge about reading and comprehension and behaviors during reading? Are students who appear to know more about variables that affect reading or useful strategies necessarily the ones that perform better on

comprehension tasks? What characteristics do influence ABE students' comprehension abilities?

Furthermore, teachers agreed that such research could be helpful in guiding classroom practice. They noted that further research and resulting practice should address the needs of the students and the classroom, and they felt that the extension of the present research program could do that.

Finally, the results of the study showed that it is feasible to use with ABE students those methodologies that have been applied to study proficient and developing young readers' knowledge about reading and their comprehension skills and strategies. It provided evidence to support their use in further research. In addition, these methodologies could be explored to determine their possibilities in terms of instruction and assessment of ABE students' knowledge, skills and strategies related to reading.

Further basic research into the comprehension skills and strategies of ABE students, as well as applied research that explores promising techniques for developing ABE students' comprehension skills and strategies, is recommended. Teachers should be kept informed about basic and applied research activities, and should be asked to provide feedback on the relevance of such activities to their needs in the classroom. In addition, teachers should be kept informed of research findings and how to apply them in their classrooms.

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**Appendix A**  
**Reading Questionnaire**

## Reading Questionnaire

I am interested in learning more about what people think about reading and what they think and do as they read. So first, I'd like to ask you some general questions about reading.

1. What do you think makes someone a really good reader?
  2. If I gave you something to read right now, how would you know if you were reading it well?
  3. What do you think makes something difficult to read?
- 

We all have had the experience of reading something and coming to a part that is confusing or difficult to understand. I am interested in learning more about what people do when this happens to them.

Now, I am going to describe a certain kind of reading situation. Then I will read a list of things that people might do in this kind of reading situation. I want you to tell me how likely you are to do each thing, on a scale of 0 through 4:

Never do: 0

Hardly ever do: 1

Do sometimes: 2

Do often: 3

Almost always do: 4

Here are two examples.

**If you are waiting in the doctor's or dentist's office, do you look at magazines?**

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

**If you are reading the newspaper, do you read the comics page?**

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

Remember that there are no right or wrong answers: I am interested in hearing what **you** would do in this situation.

Any questions? Okay, let's begin.

**If you are reading and come to a sentence that doesn't fit with the other sentences you've just read, do you:**

1. Reread the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

2. Reread the sentences that came before the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

3. Slow down as you read the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

4. Stop reading when you come to the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

5. Read on and skip over the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

6. Think back to what it said before the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

7. Think about something you knew before you started reading to help you figure out the sentence that doesn't fit?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

**If you are reading and come to a sentence that is mixed up and makes no sense, do you:**

1. Reread the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

2. Reread the sentences that came before the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

3. Slow down as you read the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

4. Stop reading when you come to the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

5. Read on and skip over the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

6. Think back to what it said before the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

7. Think about something you knew before you started reading to help you figure out the confusing sentence?

0	1	2	3	4
never	hardly	do	do	almost
do	ever	sometimes	often	always
	do			do

**Appendix B**  
**Passages**



**Sources for Passage:**

The Origin of the Word "Sandwich" was adapted from:

Benner, P.A. (1988). Contemporary's Pre-GED Critical Reading Skills, p. 21. Chicago: Contemporary Books, Inc.

How to Give First Aid was adapted from:

Bowman, K. (1989). You Can Give First Aid, Teacher's Edition, p. 4. Syracuse, NY: New Readers Press.

Basic Food Groups was adapted from:

Benner, P.A. (1988). Contemporary's Pre-GED Critical Reading Skills, p. 26. Chicago: Contemporary Books, Inc.

A Different Democrat was adapted from:

Daley, S. (1991, September 22). A different dem. Centre Daily Times, p. 2A.

**Practice Passage****The Origin of the Word *Sandwich***

Did you ever wonder where we got the word *sandwich*? It has an interesting origin. Long ago in England, people used a knife to hack a chunk of bread off a loaf and to chop a piece of meat from a roast. Often they ate with their fingers. So, of course, their fingers became sticky while eating the greasy meat.

One nobleman, the Earl of Sandwich, loved to play cards. In fact, he was so fond of playing cards that he hated to leave the table even to eat. But he disliked even more how the cards would get sticky from the grease left on his fingers if he ate while playing.

One evening, he thought of a solution. He ordered his servants to bring him bread and meat. He carved off a thin slice of bread with his knife. Next, he cut a piece of meat and placed it on the slice of bread. A second slice of bread went on top. Now he could keep his fingers clean by holding the meat between the slices of bread. And, his cards would not get sticky while he ate. Thus, the Earl invented the first sandwich.

## Normal Version

### How to Give First Aid

When a person is seriously injured or sick, there are four steps you should do right away. Do them in order. First, be sure the victim is in a safe place. If the victim is in a safe place, do not move him. You can hurt the victim even more by moving him. Then, check the victim's breathing. If the victim has stopped breathing, begin mouth-to-mouth breathing. Always check to be sure an unconscious person keeps breathing. Third, stop severe bleeding. Finally, check for poisoning.

After you do these important steps, there are other things you can do to help the victim. Call for help. Or, tell someone else to make the call. It is very important to keep talking to the victim. This will keep him calm. If the victim gets excited, he could hurt himself more. Prevent shock. Keep the victim warm, but do not let him get too hot. Be sure his clothes are loose. Cut them if necessary. If clothing is stuck to the skin, do not pull the clothing away. Ask the victim and others around what happened. Ask the victim where he is hurt. Look at him very carefully from head to toe to find any other injuries. Look for a medical bracelet, necklace, or wallet card to see if the victim has a special problem. Take care of any other injuries such as broken bones, burns, and little cuts or scrapes.

First aid means doing what you can to help until a doctor or other trained person can take over. These first four steps can help save a life. The other steps can prevent further injury. Use these steps to give first aid. Do not do anything else.

## Inconsistent Version

### How to Give First Aid

When a person is seriously injured or sick, there are four steps you should do right away. Do them in order. First, be sure the victim is in a safe place. If the victim is in a safe place, do not move him. You can hurt the victim even more by moving him. Then, check the victim's breathing. If the victim has stopped breathing, begin mouth-to-mouth breathing. Always check to be sure an unconscious person keeps breathing. Third, stop severe bleeding. Finally, check for poisoning.

After you do these important steps, there are other things you can do to help the victim. Call for help. Or, tell someone else to make the call. It is very important to keep talking to the victim. This will keep him calm. If the victim gets excited, he could hurt himself more. Prevent shock. Keep the victim warm, but do not let him get too hot. Be sure his clothes are loose. Cut them if necessary. If clothing is stuck to the skin, do not pull the clothing away. Ask the victim and others around what happened. Ask the victim where he is hurt. Look at him very carefully from head to toe to find any other injuries. Look for a medical bracelet, necklace, or wallet card to see if the victim has a special problem. Take care of any other injuries such as broken bones, burns, and little cuts or scrapes. But don't talk to the victim, because it could get him excited.

First aid means doing what you can to help until a doctor or other trained person can take over. These first four steps can help save a life. The other steps can prevent further injury. Use these steps to give first aid. Do not do anything else.

## Scrambled Version

### How to Give First Aid

When a person is seriously injured or sick, there are four steps you should do right away. Do them in order. First, be sure the victim is in a safe place. If the victim is in a safe place, do not move him. You can hurt the victim even more by moving him. Then, check the victim's breathing. If the victim has stopped breathing, begin mouth-to-mouth breathing. Always check to be sure an unconscious person keeps breathing. Third, stop severe bleeding. Finally, check for poisoning.

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## Normal Version

### Basic Food Groups

Nutritionists study food and its effect on health. They divide all food into four groups. The four groups are meat or protein-rich foods, fruits and vegetables, starches, (such as breads and cereals), and milk and milk products. Nutritionists say people should eat food from each food group every day.

The meat or protein-rich foods include meats, fish, poultry, shellfish, eggs, beans, dry peas and lentils, nuts, and peanut butter. People need two servings each day from this group of foods. They must be careful, though. These foods often contain fat. People should not eat too much fat.

Fresh fruits and vegetables are important to a good diet, too. We should have four servings a day from this group. It is best to cook these foods only until tender. Overcooking reduces the amount of vitamins in fruits and vegetables. Many fruits and vegetables may be eaten raw as a dessert or in a salad. For example, oranges and apples cut into bite-size pieces can be a great way to satisfy your sweet tooth.

Starches are important, too. They give the body energy. We need four servings of starchy foods every day. Starchy foods include bread, cereals, pasta (such as macaroni, spaghetti, and noodles), rice, potatoes, and corn.

Milk and milk products, like cheese, yogurt, and cottage cheese, make up the last group. Adults need only two servings per day from this group. But children need more. Most people don't know that low-fat milk has the same amount of nutrients as regular milk. And it is much healthier. This is because it has less fat than regular milk.

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**Normal Version****A Different Democrat**

The Democrats are positioning themselves to run against President Bush next year.

The Democratic National Committee meets in Los Angeles this weekend. And, the Democrats are more upbeat than might be expected.

Part of the happy outlook is due to pure relief. Three Democratic candidates have finally announced that they plan to run in the primary. And, a few others will likely join in the race.

Another part of the happy outlook is due to the polls. President Bush now has record public approval ratings. But, the polls say that voters are dissatisfied with the direction of the country under him.

Finally, Democrats are hopeful because they expect Senator Bob Kerrey to join the race.

Kerrey used to be governor of Nebraska. He is young, well-spoken, and smart. He should join the race on September 30. And, he will stand out among the Democratic candidates.

"Kerrey has a very special quality politically," said Mike McCurry. McCurry is former Democratic National Committee spokesman. He says we should look at Kerrey's life experiences. We should look at his experiences in the military. Mc Curry says, ". . .it seems fair to say that he starts with more raw material than some of the others."

The Democrats are excited about Kerrey joining the race. But, they wonder where he will stand on the issues.

He is not in Los Angeles this weekend. He won't speak to the Democratic National Committee. Other declared candidates, and some who are expected to run, will speak there.

Many Democrats think Kerrey will try to avoid party debate over tricky issues. They expect him to present himself as a "new Democrat." This would be much like Gary Hart's "new ideas" approach in 1984.

## **Inconsistent Version**

### **A Different Democrat**

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The Democrats are not very excited about Kerrey joining the race. But, they wonder where he will stand on the issues.

He is not in Los Angeles this weekend. He won't speak to the Democratic National Committee. Other declared candidates, and some who are expected to run, will speak there.

Many Democrats think Kerrey will try to avoid party debate over tricky issues. They expect him to present himself as a "new Democrat." This would be much like Gary Hart's "new ideas" approach in 1984.

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**Appendix C**  
**Categories Used to Code**  
**Student Responses to Open-Ended Questions**  
**on the Reading Questionnaire**

Categories for Question #1 (What do you think makes someone a really good reader?)

- Practice

Answer relates to reading often, in different situations

- Process/ Procedural Knowledge

Answer relates to things done before reading to prepare to read or during reading (they use pre-reading activities to learn about text, read fast, take their time, concentrate, pay attention can pronounce the words -- but, not comprehension)

- Application

Answer relates to applying or doing something with information gained through reading

- Comprehension/Meaning Extraction

Answer relates to understanding what the text means, is about

- Global/Whole

Answer relates to knowing what the text as a whole is about

- Part

Answer relates to understanding words, sentences, but doesn't refer to the text as a whole

- Personal

- Know How/Just Know

- Circumstances

Answer relates to luck, opportunities



- Motivation

Answer relates to liking books in general, the topic in particular, learning in general

- Prior Topic Knowledge

Answer relates to having declarative (statable) knowledge in general, or specifically about the text, knowing what the words in a text mean

Categories for Question #2 (If I gave you something to read right now, how would you know if you were reading it well?)

- Person related (Clues from themselves)

- Correctness

Answer indicates that if they made no mistakes, they would know they were reading well

- Speed

Answer indicates that speed would indicate they were reading well; or, if they read slowly, they would read well

- Smoothness

Answer indicates that if they read without hesitating, they would know they were reading well

- Understanding

Answer indicates that if they understood what they were reading, they would know they were reading well

- Global/Whole

Answer relates to the text as a whole

- Part

Answer relates to sentences or words

- Remembering

Answer indicates that if they remembered what they were reading, they would know they had read it well

- Strategies

Answer indicates using strategies (rereading, skimming before reading) would ensure that they would read well

- Text-relative

- Enjoyment

Answer indicates that if the text is on something they enjoy, they will read it well

- Topic Knowledge

Answer specifically indicates that aspects of the text itself (words, topic they were familiar or unfamiliar with) would determine whether they could read it well

- Environment related (Would depend on the environment)

Answer indicates that if the environment/circumstances were favorable (quiet, they had lights, glasses) they could read it well

- External Clues

Answer indicates that they would need external indication of whether they had read something well -- from a teacher, test results

- Don't Know

Categories for Question #3 (What do you think makes something difficult to read?)

- Responses related to text
  - Answer clearly shows that the problem is with the text, not the reader (small print, something that's poorly written, something with long words)
- Responses related to reader's interaction with text
  - Answer does not clearly indicate whether the difficulty is due to the text itself or a problem the reader has
    - word level (words I can't pronounce, words I can't understand, words I'm not familiar with, names)
    - text level (something I'm not familiar with, something I'm not interested in, something I don't understand)
    - text type (type of text is specifically mentioned: directions, the Bible, a college textbook)
- Responses related to the person
  - Answer clearly shows that student focuses on self (Your ability, your experience, you make it harder than it is)
- Responses related to the environment
  - Answer relates to conditions under which reading is being done (light is poor, I don't have my glasses, room is noisy)
- Don't Know

**Appendix D**  
**Categories Used to Code Read Aloud Sessions**

Detects Problem

Rereads Sentence

Rereads Previous Sentences

Hesitates (Slows down, Stops)

Thinks Back to Something Stated Earlier in Passage

Uses Prior Knowledge

Reads On and Skips Problem

Tries to Fix, Fixes Problem

**Appendix E**  
**Categories Used to Code Post-Reading Interviews**

Detects Problem

Rereads Sentence

Rereads Previous Sentences

Hesitates (Slows down, Stops)

Thinks Back to Something Stated Earlier in Passage

Uses Prior Knowledge

Reads On and Skips Problem

Tries to Fix, Fixes Problem

Reads On to Understand