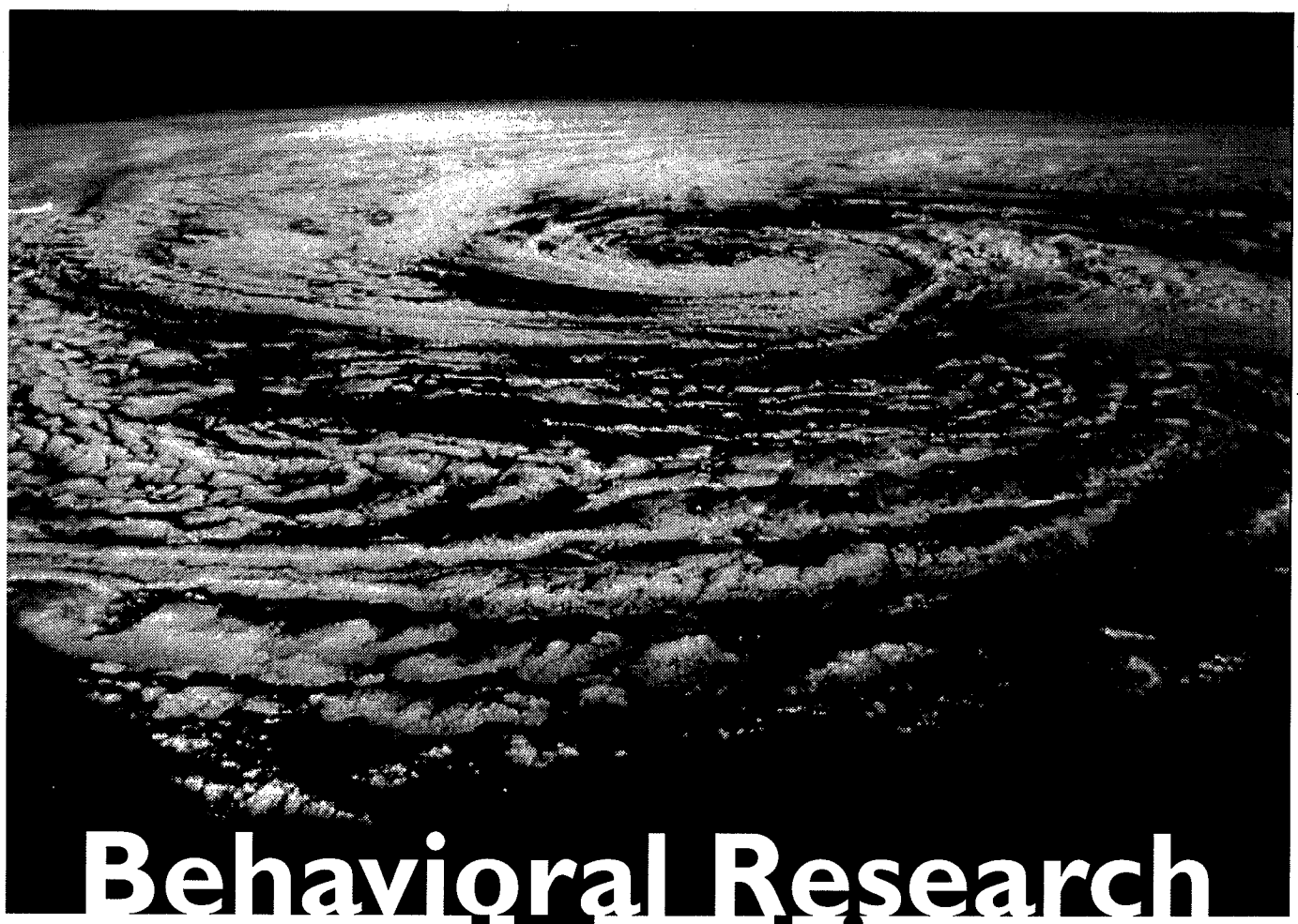

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Reading Retells as a Curriculum-Based Measure

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Abstract

This study focuses on reading retells as a sensitive measure of reading comprehension over time. While such measures have been part of the reading comprehension literature for decades, surprisingly few studies have been conducted on the psychometric properties to determine whether they are capable of reflecting growth. In part, this outcome arises because the empirical literature is divided on the use of retells: Some researchers consider them as independent variables which become the focus of instruction, while others treat them as dependent measures capable of reflecting student comprehension. In this study, low-achieving students and those with learning disabilities in grades 3 and 4 were taught reading in general education, special education, and Chapter I programs. For 10 weeks, they were measured weekly on passages that had been sampled from an expository text not directly used as part of instruction. We were interested primarily in performance changes over time, using a number of different metrics to summarize performance. Our results indicated that several metrics using a retell format are indeed capable of reflecting growth and may be used to monitor progress when other measures are either not available or inadequate. Surprisingly, the retell measures did not correlate with oral reading fluency, indicating that the two measures may both be necessary to document the full record of change in reading.

Introduction

Retelling as a Measure of Comprehension

Certainly, retells are not new assessment methods. Farr and Carey (1986) describe Pintner's (1913) early measurement method of assessing reading comprehension in which students read and then wrote down what they could remember without looking back. Brown (1914) studied the relationship between quantity and quality of reproductions in the assessment of recall.

Such an extended history in the assessment of reading may well be a function of the ease with which retells are deployed and interpreted. Kalmbach (1986b) states that "retellings of stories, having students write or tell you everything they can remember about a story, have been used for the last 60 years to gather data in an amazing range of language based inquiries" (p. 327); he describes the most important component of retelling as a creation of narrative text onto itself. In analyzing this narrative, he points to the structure and function of stories, and focuses on transitional elements, story body, and evaluation components (using comparisons, correlations, explicatives, and intensifiers). The main issue, according to him, is that retellings involve a process of selection and it is in the evaluation sections of the re-created story that the assessment can focus on "what the students see as the central events of the story" (p. 330). Similarly, Smith (1979) notes that retellings allow us the opportunity to see at a minimum what the reader recalls; however, more importantly, they allow us to see inferences made by the reader and the use of language in expressing their ideas.

Kalmbach (1986a) describes several evaluation criteria that can be used to ascertain the quality of student retell creations. The essential basis for evaluation comes from a whole reading analysis in which rating scales are used to (a) step back and look at the whole, (b) move beyond the narrative and view the evaluative view, and (c) compare large groups of retellings.

Historically, retells have been used as an intervention as well as a dependent measure. In either case, the database for empirically defining the process and outcomes from retelling-based assessment are still quite thin. And the methodology remains quite diverse across investigators. Few studies have focused on change over time.

Research on Retells as an Independent Variable

Morrow (1986) points out that story retelling has most typically been used as an assessment device, not an intervention, citing the research of Mandler and Johnson (1977), Stein and Glenn (1979), and Thorndyke (1977). A number of researchers, however, have viewed retelling as an independent variable. For example, along with Gambrell, Pfieffer, and Wilson, (1985), as well as Zimiles and Kuhns, (1976), Morrow used story retelling as an important independent variable designed to improve student comprehension on other performance measures. Not only did she find that frequent retelling resulted in improved comprehension, but it also resulted in better and more creative original stories. In two areas of story structure (setting and plot episodes),

kindergarten children who retold stories were significantly better than control students who had no such opportunities. Others have focused on similar uses of retells. Pellegrini and Galda (1982), using a criterion-referenced test and retell tests, found improvements in the total number of events recalled and the sequence of the events when children were actively involved in re-creating stories with fantasy play. Finally, both Marshall (1983) and Taylor (1982) have used retelling as an instructional strategy.

Research on Retelling as a Dependent Variable

Clark's study (1982) is typical of the literature in which retells are used as dependent measures; he used free recall assessments in the following manner: First, the text was divided into pausal units (defined as a place where "a good reader would normally pause during oral reading" [p. 436]. Second, each pausal unit was assigned a value from 1 to 3 reflecting the relative importance in the story. Third, the student was asked to read the passage and then tell everything that could be remembered. He suggested analyzing the results by counting the number of pausal units recalled, subjectively rating the sequence of the retell, and finally, computing the average; rated importance value. Or, as in the retells described by Wood (1985), a chapter or unit was organized around key concepts which student's would then use in a list form to take notes or in dialogue among student pairs. Then, instead of taking a traditional test, they would "write all they could remember about each concept by defining, using specific examples, and showing relationships between the terms" (p. 109). This scoring system was loosely described as assigning "+" and "-" marks to each students' protocol.

Not all researchers, however, are interested in quantifying the outcomes; rather, a qualitative analysis is preferred. For example, Irwin and Mitchell's (1983) analysis of retells focused on two issues: (a) what characteristics of retells distinguish different levels of text understanding? and (b) which retellings are superior? Rather than breaking down retells into point systems, they view them as a "tapestry which, while composed of many different colored strands, can be properly viewed and appreciated only in its totality...its richness--its essence, the very qualities which define it as a tapestry--must be experienced in terms of its total impression" (p. 393). They propose using holistic judgments more typically used in analyzing student writing compositions.

Context and format issues in measuring retells

Frequently, the most important issue is not simply in scoring performance but in understanding the impact of context and format of the measurement procedures. The findings of Davey (1989) are typical of this line of research: Differences appear between recognition and production tasks; furthermore, free response items are differentially difficult with good and poor readers, while multiple-choice comprehension tasks are not so different. Student strategies also are different in that good readers are effective in using the text (during testing that allows "lookbacks"), but when such skimming proves

ineffective, they strategically use their own background knowledge. In contrast, poor readers reproduce inappropriate text obtained during their "lookbacks" rather than guess using their own background knowledge.

The "think alouds" reported by Wade (1990) are another example of very different formats used to understand retells. These measures are based on students' "verbal self reports about their thinking processes--to obtain information about how they attempted to construct meaning from text" (p. 442). Although the strategy ends with students retelling the whole passage, the texts that were typically selected involved topics readers could not know about until they had read the last segment.

Finally, McConaughy (1985) investigated four different retell formats: (a) listening-oral recall, (b) reading-oral recall, (c) listening-written recall, and (d) reading-written recall. Story retells were parsed into "thought units" (a statement with one subject and one verb), which also were subsequently coded into story grammar elements. She found that good readers produce longer summaries than poor readers (and the oral response resulted in longer summaries); no significant differences appeared as a function of whether the story was read or heard. Some story grammar elements were more apparent in the retells (settings, initiating events, resolutions and outcomes--basically the beginning and ending of the stories).

Purpose for using retell measures

Another line of retell research has focused on the purposes for using retell outcomes. In the study by Wade (1990), the procedure was eventually used to classify readers into one of five groups: (a) "good comprehenders," who actively processed information while it was being taken in, (b) "non-risk takers," who seldom went beyond the text and were passive in their depiction of the text during the reading, (c) "nonintegrators," who shifted in their assignment of meaning to every segment of text, often quite independently of previous or subsequent information, (d) "schema imposers," who took an early position regarding meaning and were inflexible to adjust it (elaborate or recreate) in spite of contradictory or extended information, and finally (e) "storytellers," who approached reading tasks from entirely personological views.

Evans and Ballance's (1980) research represented a considerably different purpose: to understand the sentence connective devices in three types of text (expository, narrative, and descriptive) for two groups of readers 10 years apart. Their most basic finding was that older subjects had better recall of most connective devices.

Finally, Brennan, Bridge, & Winograd (1986) studied the effects of structural variation on children's recall of basal reader stories. By looking at a poorly formed story structure and one with a well-formed story structure, they anticipated differences in children's recall on a number of dependent measures: amount of information, number of events, and responses to explicit and implicit information requests. Using both a free and probed recall, second grade students read the passages and then orally retold

everything they remembered about the story. Each student's recall was counted for the number of concepts and relations present that had been apparent in the story, as well as performance on questions structured from weighted pausal units. The results reflected significantly better performance with the well-structured stories. Furthermore, the relationships between subjects, free recall of information, and the correct sequencing of it, was stronger for the well-structured story. "Results indicate that the subjects who read the well-formed stories remembered more explicitly stated information [concepts and relations] than subjects who read the poorly-framed story. Subjects in the present study were not only better able to recall more explicit information, but also more apt to recall it in correct sequence after reading the well-formed story (p. 100).

Bower (1976) describes the following similar findings:

1. Story understanding is facilitated by story structure and influenced by general knowledge.
2. Text that violates the rules of story grammar is not recalled well.
3. Elements that are high in a hierarchical description tend to appear in summaries, are recalled more often, and are forgotten more slowly, "with the consequences that over time recall protocols tend to look progressively more like summaries" (p. 523).

In summarizing this research, it is important to consider the many influences upon retell performance, particularly the text itself. Clearly, retell research needs to be studied within the context of the material being read and the purpose for both reading this text and for making educational decisions based on the outcomes (Kameenui, Carnine, & Freschi, 1982).

Criterion validity research on retells

Continued research on the criterion validity of retells also has been the central issue for a number of researchers. Smith and Jackson (1985) used written retellings to investigate several aspects of comprehension: generalizations and details, as well as "the student's ability to integrate selected details into a coherent, whole statement is reflected in the third score, given for the quality of the text created" (p. 623). While these authors were able to attain very adequate (rating) reliabilities, only moderate correlations with the Stanford Achievement Test were obtained over five years of data collection. Yet, using the retellings to understand the degree of content-based versus background-oriented information present within the retellings was considered most helpful in placing college students into programs.

Fuchs, Fuchs, and Maxwell (1988) conducted a large-criterion validation, correlational study with a group of mild to moderately handicapped junior high and middle school students. Using a number of different measures, they compared student relative standing on: Stanford Achievement Test, recall measures scored in a variety of ways, oral reading, question answering, and cloze. They found that the number of words written in a retell may be an adequate and valid indicator of comprehension performance. "Frequent

monitoring of number of words retold may represent a useful and logistically acceptable means of tracking pupils' reading comprehension growth" (p. 26).

Summary and Purpose of Current Research

Whether retells are studied as an independent variable or a dependent measure (variable), which is the primary historical perspective, clearly, the two perspectives are linked together. From an instructional vantage, such connections are preferred: Students can be taught on alternate forms and formats from which student performance is ultimately monitored. And without directly practicing on the test in a rote manner, students can become proficient in a skill with considerable classroom application. The problem is knowing how to interpret performance: Is it practice on the task or are students increasing in overall comprehension?

As Gambrell, Pfeiffer, and Wilson (1985) write ,"very little is known about the effect of practice on retelling. There is a wealth of information about retelling from the perspective of the novice reteller, however, it is not known whether, with practice, students become more proficient in their retelling strategies" (p. 217). To them, retelling engages both the integration of different parts of text along with the readers background knowledge and fits the model of generative learning. In their investigation of the effects of retelling on reading comprehension, they sampled students in fourth grade classrooms and used expository text (of about 240 words in length). Over the course of four sessions, they directed one group of students how to retell the important idea and supporting detail (without any teacher corrections); for the other group, they directed them to illustrate the passage. On an independent passage, students completed an outline and retell of the story, with performance scored according to the number of informational units. They found significant results on both literal and inferential questions on all three measures (immediate recall, 2-day free recall, and cued recall) and concluded that "retelling is a highly potent generative learning strategy and that retelling has direct and beneficial consequences on children's processing of text information. Importantly, the benefits appeared to transfer to the reading of subsequent text" (p. 219).

Likewise, Morrow (1985) cites recalling of stories as "an active procedure that may aid comprehension, concept of story structure, and oral language" (p. 647). In two experiments, she found that with kindergartners given opportunities to retell stories, improvements occurred on comprehension tests; more significant improvements resulted when they were given multiple stories to retell over time. In particular, such improvements were reliably evident with four areas of story retelling: theme, resolution, sequencing, and total story retelling, with no significant gains in setting and plot episodes. Most importantly, "children who improved most in comprehension also improved most in their retellings. This finding suggests that a common factor was responsible for both types of gains and is consistent with the argument that retelling experiences enhance a sense of story

structure leading to both improved retelling accuracy and greater comprehension" (p. 659).

The purpose of this study is to document the practice effects and learning rates of retelling as a skill separate from direct instruction on the process. If, in learning what the baseline rate of change is in this skill as part of a broad instructional program devoted to teaching students to read in general, we may then begin to build more specific instructional strategies aimed at the process of retelling itself. However, rather than limit growth to pre-post measures, we also use slope over time.

Method

Subjects

The following 35 students participated in the study: Twelve regular education 3rd graders (8 girls and 4 boys), 12 regular education fourth graders (8 girls and 4 boys), and 11 special education fourth graders (3 girls and 8 boys). Special education students had been identified as learning disabled according to state guidelines, which required discrepancies between ability and achievement. Of the original group that began the study, only one special education student dropped out. Students were being taught by teachers in 9 schools in a local district and were assessed weekly by 15 teachers-in-training in a Handicapped Learner Endorsement practicum (10 were completing special education endorsement and 5 were pursuing general education certificates). All students, teachers, and testers had volunteered in response to a request from the second author. Potential subjects completed a timed screening test to determine eligibility for the study. A ceiling level of 150 words per minute and a basal level of 21 errors was established.

Materials

Passages were selected from *New Practice Readers,* a supplementary reading program containing short expository stories with generally controlled vocabulary. Of the 10 passages used in the testing, 2 were from Level A, 7 from Level B, and 1 from Level C. The range of grade level readabilities using Spache's formula was 2.9 to 3.8; using Frye's readability index, the range was grades 2 to 6. Each passage contained about 150 words (from 111 to 177) and was retyped onto 8.5 x 11 inch paper.

Procedures

Fidelity of treatment was guarded in several ways. First, the data collectors were well trained. They had previously completed a course in reading instruction methodology, and were experienced in administering oral reading fluency tests to children. As volunteers in the study, they participated in several training sessions.

Second, care was taken to ensure the tests would be administered in a reliable manner once the study began. The data collectors were given test manuals with scripted administration procedures. All tester wording was

printed in bold print. Throughout the course of the study, all test sessions were audiotaped. These tapes were checked after every third test to make sure the tests continued to be administered in a standardized manner.

Third, students were tested in the same manner each week. As one purpose of this study was to determine if student progress in reading changes across time, it was important that the tests be administered at equal intervals. Wednesday was chosen as the testing day. If the test could not be administered on a Wednesday, it was administered on either the Tuesday before or Thursday after the testing day. If the test could not be given on any one of these three days, it was not administered, and a new test was administered at the appropriate time the next week. The study proceeded in the following manner:

Teachers-in-training were taught how to administer and score both an oral reading fluency measure and an oral retell. Three passages were used in this training: *A Great Traveler, The Bandage Pole, and The House That Julia Built.* For each passage, were developed: two copies a student copy and a tester copy (with a count of the cumulative number of words by line typed in the right margin of each line)._ The teachers-in-training practiced administering the tests to one another in two sessions and to a child in a third session. Following training, teachers-in-training answered items: (a) Were the administration procedures easy to follow? (b) Were the oral reading fluency errors easy to record? (c) If you answered "no," how could error recording be improved? (d) Disregarding the quality of the response, was the student able to retell what they had read with relative ease? In other words, did he seem to know what was expected of him and respond accordingly? And (e) What questions did the student ask you regarding the test? Directions for test administration and scoring were revised for use with the subjects in the study.

Before tests were administered under standardized conditions, subjects participated in a practice procedure in which they were taught to orally retell information from a reading passage. This practice procedure took between 15 and 25 minutes to complete.

1. Retell procedures were modeled by the tester in the following manner:

> For the rest of the reading we do each week, I will ask you to read and then tell me everything you can remember about what you just read. I'll show you how to do this now. First I will read out loud, then I'll show you how I tell about what I just read. While I read I try to remember important facts. I try to remember things in the order they happened. I also try to remember as many details as I can. Listen as I read.

2. The tester read aloud from the passage entitled *Underground Fairyland,* at the end of which he/she said; "Now I think for a moment about what I just read" (waiting at least 5 seconds). The tester then retold the story by highlighting three facets: (a) The main idea (b) More important information about the main idea. and (c) Details in order.

3. The passage was then retold following the script. Students were then given another passage (*Mud-Ball Houses*) and told the following:

> Now it's your turn to practice one. Read this passage aloud. Get ready to tell me about what you remember. As you read, think about the important ideas, the order in which things are told, and as many facts as you can remember. You may start with the title and begin reading.

4. When the students finished reading, they were instructed to retell what they had read by saying the following:

> Now I want you to think about what you just read. After you think for about five seconds, I want you to tell me everything you can remember from the page you just read. (Pause for five seconds). Now tell me everything you remember about what you just read.

5. As the students retold the passage, their responses were scored on *Tester Retell Score Sheet : Mud-Ball Houses* . If the students mentioned at least three idea units, testers were directed to administer the first and all subsequent oral fluency and retell tests. If the students scored two idea units or fewer, they were told the following: "Listen to how I would retell that information. First I'll read the page and try to remember the important ideas" (read *Tester Copy: Mud-ball Houses* aloud). "Now I'll show you how I retell what I just read" (follow script for *Tester Retell-Model: Mud-ball Houses).* Finally, students were directed to read and retell again, by saying the following: "Now it's your turn. Read the page again and try to remember the important ideas. When you're done I'll ask you to tell me all you can remember about what you just read." When the student finished reading, the student was instructed to retell what he had read by saying the following:

> Now I want you to think about what you just read. After you think for about five seconds, I want you to tell me everything you can remember from the page you just read. (Pause for five seconds). Now tell me everything you remember about what you just read.

As the student retold the passage, responses were marked on the retell sheet. Items retold on the second attempt were marked with a "2." Again, a decision guide was used. If three or more idea units were mentioned, testers administered the first and subsequent tests; If the student mentioned two idea units or less, the student was dropped. (Only the one special education student mentioned earlier was dropped at this point).

6. The tester stopped the audiotape and marked the test number and date on label. When the next test session began, the tester simply started taping the session at the point on the tape where the previous taping had stopped.

Weekly testing began in the middle of March and continued through the middle of June. All tests thereafter took between 6 and 10 minutes to complete. Tests were administered as follows:

6a. Testers were given general directions:

> The test will be administered on the same day each week. The test is ideally administered at the same time each day as well. When choosing the testing day and time, consider when interruptions (from absences, assemblies, etc.) are **least** likely to occur. If you are able to predict that a testing session will not occur on the selected test day (ex: a school holiday or you or the student will be absent), test the student during the same time period one day earlier. If your selected test day passes, and the test has not been administered, test the student during the same time period on the next day. It is very important that the testing occur within one day on either side of the selected day.

6b. Each test was given to students individually. The testing was to take place in a quiet, empty room. If this was not possible, an area of the classroom was chosen that was free from distracting noise and movement. One test was administered each week, in the order in which it appeared in the test packet. Testers were told to sit beside the student at a table or desk and begin tape-recording the session when they were seated. The following standardized script was used to explain the testing procedure:

> I want you to read a short page of writing aloud for me. Read quickly, but not so quickly that you make mistakes or forget what you've read. If you get stuck on a word, I'll say "pass" and go on. If I think you're stuck on a word, I'll say pass and you should go on to the next word. When you're finished reading, I'm going to ask you to tell me all you can remember about what you've read, so try to remember as you read. You may begin reading aloud. Start with the title.

Five types of oral reading errors were recorded: (a) hesitations of 5 seconds or more, at which time the tester told the student to say "pass" and go on; (b) reversals; (c) omissions; (d) misidentifications; and (e) word substitutions. Three other types of miscues were recorded but not scored as errors: self-corrections, repetitions, and insertions.

6c. Testers began timing the student reading after the title was read, recording errors on their copy. Students were stopped after they read for one minute, and a slash was marked on the tester copy at the point where the student stopped reading. Time and student errors were recorded on the top of the tester copy.

When the students finished reading, they were instructed to retell in the same manner as in the practice procedure described earlier. The retell session was ended when the student indicated he could remember no more about the passage.

The test given during Week 1 was considered a practice test, and the data was not used for the analysis. In all retells used for collecting data (weeks 2-11), synonyms and paraphrasing were accepted, as long as the idea expressed was intact. Because student retells were not necessarily stated in the order they appeared in the passage, testers were directed to know the items on the score sheet well so they could score quickly and accurately.

Measures

Each idea unit represents a fact, a concept, or a relationship. Retell responses were evaluated against these units. Student responses had to clearly express ideas from the original passage in order to be credited as correct. For instance, if the original idea unit was: "There is a tube that connects the middle ear to the inner ear" (an idea showing relationship), and the student stated: "There is a middle ear" (a single fact), this statement was not credited as representing the original idea unit. Further, if a pronoun referent in the response was not clear, the statement was not credited. An example of idea units and how retell responses are scored is shown in Figure 1.

Text Passage (and Cumulative Word Count): How We Hear

Our ears are really like fine instruments. They need to be guarded. The part of the ear	17
that we see is the outer ear. It helps to catch sound. Sound passes through the opening	34
to the middle ear.	38
At the beginning of the middle ear is the eardrum. Within the middle ear are little bones	55
that help to carry sound. A passage leads from the middle ear to the back part of the	73
nose and upper part of the throat. It is like a little tunnel or a water pipe, about as big as	94
a big paper clip.	98
Beyond the middle ear is the inner ear. In the inner ear, there is a nerve that acts like an	118
electric wire. It carries sound to the brain. All parts of the ear are very delicate. They can	136
be easily damaged.	139

Text Passage Parsed into 17 Idea Units

1. Main Idea: This is about ears/how we hear
2. Ears are like instruments
3. Ears need to be guarded
4. We see outer ear
5. Outer ear catches sound
6. Sound passes to inner ear
7. In middle ear is ear drum
8. In middle ear are bones that carry sound
9. Passage goes from middle ear to throat/nose
10. Passage like tunnel/water pipe
11. Passage as big as paper clip
12. After middle ear is inner ear
13. Inner ear has a nerve
14. Nerve acts like electric wire
15. Nerve carries sound to brain
16. Ear is delicate
17. Ear can be easily damaged

Student Retell: How We Hear

Idea Unit #	Idea Unit Content
1	Well, I remember that your ears are kind of like an instrument
2	and that they carry sound
3	uh some of the sound goes into the ear to the nostril and down to the throat
4	um and we have ear drums that can contain sound that's all I can remember

Figure 1. Example of passage and student response scored according to idea units.

Idea unit scoring was carried out by one judge. Reliability was tested by having two independent judges score 45 randomly selected retell responses. Interscorer agreement was significantly high enough to suggest that idea unit scoring can be carried out reliably; the ratings intercorrelated .91, .89, and .88 among each other.

Holistic scoring was carried out by three judges. Before the first grading session, the judges defined six anchors for use in scoring; a score of 5 represented the highest quality retell, a score of 0 represented no response. Using the defined anchors, the judges completed several calibration exercises. Anchors and differences in judgment were discussed after each calibration exercise, but anchors were not changed after the first adjustment. Interscorer agreement was measured, to determine how reliably holistic scoring procedures could be executed. The degree to which the judges agreed on assigned scores indicates that this procedure can be used to reliably score retells; we found that the three judges' ratings intercorrelated .75, .74, and .75 among each other.

Results

Five different analyses are reported describing the utility of retells for progress monitoring. Descriptive statistics are reported, displaying means and standard deviations; two types of change over time are investigated, the first of which uses visual inspection of time series data and a linear trend analysis over the 10 weeks, while the second type of change analysis is based on a repeated measures analysis of variance to determine the statistical significance of differences between pre- and post-performance levels. Correlations among the five dependent variables are computed to ascertain which measures are related to each other. Finally, regression analysis is conducted to explain the predictiveness of the four quantitative measures in explaining judgments of quality.

Descriptive Statistics for Five Dependent Variables

On the retells, students spoke approximately 55 to 80 words, of which 35 to 50 were unique (all repetitions ignored); from 2 to 6 idea units were expressed. These retells were generally rated from 2 to 2.5 on a 5-point scale of quality. The average student in the group read the passages quite fluently, orally reading from 75 to 100 words correctly per minute. Descriptive statistics (count, mean, and standard deviation) for all five variables are displayed in Table 1.

Table 1. Descriptive Statistics for Each of the Retell Measures and Reading Fluency

	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	WK11
Words Spoken										
N	32	35	35	34	35	31	34	33	31	30
M	57.9	58.6	63.860.6	67.557.6	70.267.5	68.9	80.7			
SD	26.7	35.5	31.728.4	28.633.1	38.936.1	37.2	37.7			
Unique Words										
N	32	35	35	34	35	31	34	33	33	30
M	36.0	34.3	40.1	38.340.2	34.8	43.0	42.6	43.3	52.9	
SD	12.9	14.5	14.3	10.512.1	15.0	16.9	16.2	17.4	19.1	

	Wk2	Wk3	Wk4	Wk5	Wk6	Wk7	Wk8	Wk9	Wk10	WK11
Idea Units										
N	32	35	34	34	34	31	34	33	31	30
M	3.3	2.5	4.1	5.7	6.0	2.1	4.7	3.2	5.5	5.9
SD	1.6	1.7	2.9	3.1	2.8	2.3	3.1	2.0	3.0	4.2
Judgment of Quality										
N	32	35	34	34	34	31	34	33	31	30
M	2.1	2.1	2.2	2.4	2.6	2.0	2.3	2.4	2.4	2.5
SD	0.8	0.9	1.0	1.0	0.9	0.8	1.0	0.9	1.0	0.7
Oral Reading Fluency										
N	34	35	35	34	35	34	35	34	33	31
M	77.7	96.5	88.2	109.9	103.8	99.8	91.5	101.3	101.9	90.4
SD	30.2	34.8	27.2	30.8	34.6	30.8	37.3	28.7	34.0	28.9

Trend Analysis

To display change over the 10-week instructional and measurement interval, time-series graphs were created (see Figure 2). Generally, the data reflect stable performance and an orderly improvement over time. For the number of words spoken in the retells, students began with nearly 55 words on average and increased to about 75 words, reflecting a slope of almost 2 words per week improvement, which accounted for 64 percent of the variance ($f[x] = 1.91x + 54.8$, $R^2 = .64$). Students also improved in the number of unique words used in their retell. At the beginning of the study, students averaged almost 33 words appearing at least once, and at the end of the 10 weeks, they were using 47 unique words. The slope of improvement was well over a one word increase per week, which accounted for 63 percent of the variance ($f[x] = 1.4x + 32.7$, $R^2 = .63$). The last quantitative measure of retell improvement was the number of idea units expressed. Students began the 10-week interval by remembering just over 3 idea units; at the end, they were recalling almost 6 idea units per retell. This change, however, occurred with considerable variability from week to week, thus the amount of variance accounted for was relatively small, 17 percent ($f[x] = .2x + 32$, $R^2 = .17$). Unlike the quantitative measures of retell, no improvement occurred in the overall trend of retell quality; a gradual improvement over the first 6 weeks was disrupted by a significant shift downward in week 7, with another gradual increase in quality occurring over the last 4 weeks. Finally, in the number of words read correctly per minute (ORF), some improvement was evident: Beginning performance of 91 words per minute ended at 100 words 10 weeks later, reflecting a slope of .96 (about one word of growth per week). This slope did not account for much of the performance changes, only 10 percent ($f[x] = .96x + 90.8$, $R^2 = .098$).

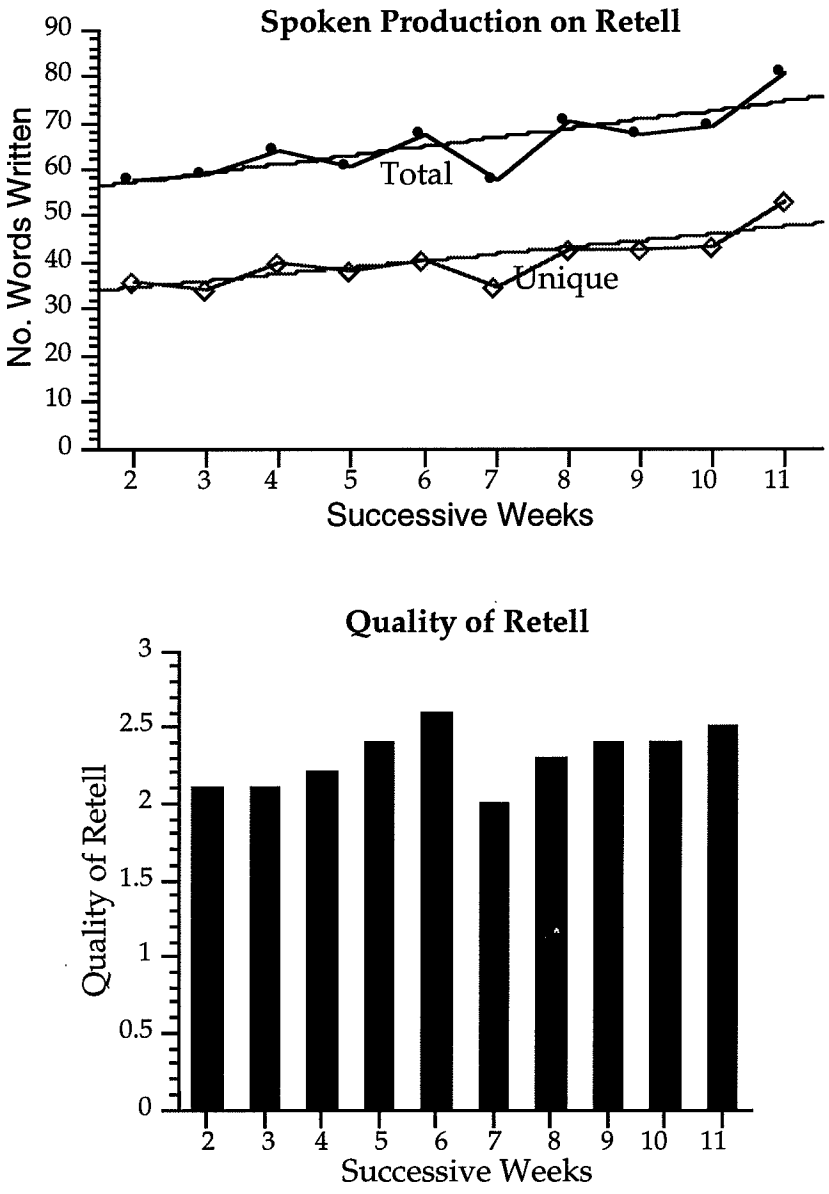


Figure 2. Trend of performance for five reading retell measures.

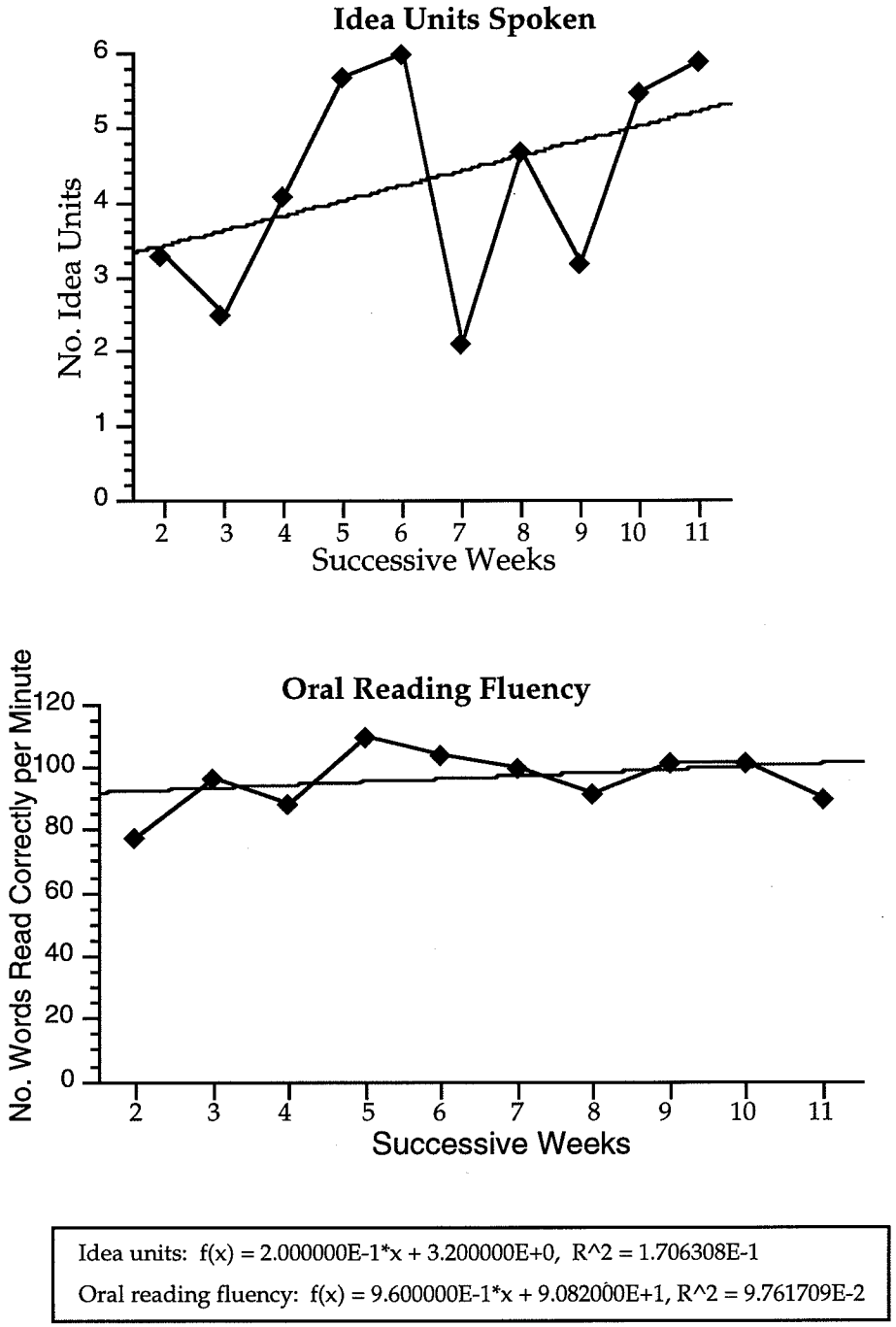


Figure 2. Trend of performance for five reading retell measures (Continued).

Pre-Post Statistical Analysis

Change over the 10-week interval also was analyzed by comparing performance early in their instructional program with that attained at the end of it (see Table 2). The data for this analysis consisted of the first two scores' average from weeks 2 *and* 3 when available (for 31 students with retells and 34 students with ORF) and either week 1 *or* 2's score when students were absent on one of these measurement days (for 3 students with retell and 1 student with ORF scores). A similar strategy was used for organizing data at the end of 10 weeks:

Table 2. Pre and Post Performance Scores for Two Student Groups (Status) for Each Dependent Measure in Reading

Measure	N	Status	Pre	Post
Words Spoken	24	Reg	56.7	76.3
	11	Sped	59.5	73.8
	35	Overall	57.6	75.5
Unique Words	24	Reg	34.5	48.6
	11	Sped	35.5	50.0
	35	Overall	34.8	49.0
Idea Units	24	Reg	3.1	6.1
	10	Sped	2.6	4.8
	34	Overall	3.0	5.7
Quality	24	Reg	2.1	2.5
	11	Sped	2.0	2.4
	35	Overall	2.1	2.4
Oral Fluency	25	Reg	99.4	104.5
	10	Sped	64.7	69.6
	35	Overall	88.5	95.1

The last two data values from weeks 10 *and* 11 were averaged when available (for 27 students with retells and 29 students with ORF), otherwise either weeks 10 *or* 11 were used when only one score was available (for 8 and 6 students with retell and ORF scores, respectively). A one-between, one-within repeated measures analysis of variance was then completed, using student special education status as the between factor (with two levels, special and regular) and pre-post as the within factor (see Table 3). On all retell variables, a significant main effect for time was found; however, neither the main effect for status nor the interaction between status and time was significant. On the oral reading fluency measure, significant differences existed only for time. The two groups of students were not significantly different from each other, and they did not change differentially over the 10 weeks.

Table 3. Repeated Measures Analysis of Variance on Five Variables for Two Groups of Students from Pre (Average of Weeks Two and Three) to Post (Average of Weeks Ten and Eleven) Retell

	Status (Spec-Reg)		Time (Pre-Post)		Interaction	
	F	*p*	F	*p* F	*p*	
Words Spoken	.0002	.99	12.4	.0010	.230	.64
Unique Words	0.0580	.81	32.8	.0001	0.004	.95
Idea Units 1.1540	.29	33.5	.0001	.559	.46	
Retell Quality	0.1260	.72	11.0	.0023	0.026	.87
Reading Fluency	12.2750	.001	2.7	.1100	.272	.61

Correlations Among Dependent Measures

The relationships among the five dependent variables were varied (see Table 4). A very high relationship existed across the 10 weeks between the number of words spoken and the number of unique words used in the retells. For the other two retell measures, idea units and quality, the relationship with word production also was quite high, with most correlations in the range of .60 to .80. The correlation between the number of words spoken and the number of words read correctly was very low to nonexistent. Similar findings occurred when the other retell measures were intercorrelated with each other: Moderate to high correlations existed. However, oral reading fluency failed to correlate with any of these measures.

Table 4. Correlations among Five Dependent Variables for Each of 10 Weeks

					Words Spoken					
WEEK:	2	3	4	5	6	7	8	9	10	11
Unique Words	.94	.97	.95	.96	.96	.97	.97	.97	.97	.86
Idea Units	.64	.63	.67	.81	.69	.48	.84	.68	.76	.70
Quality	.79	.85	.71	.75	.79	.74	.84	.63	.70	.66
Reading Fluency	.05	.38	.29	.19	.36	.25	.26	.04	.37	.17
					Unique Words					
WEEK:	2	3	4	5	6	7	8	9	10	11
Idea Units	.59	.61	.62	.86	.67	.50	.85	.72	.79	.77
Quality	.77	.86	.70	.75	.79	.73	.88	.75	.74	.74
Reading Fluency	.02	-.01	.15	-.03	.06	-.18	.12	-.06	.20	.15
					Idea Units					
WEEK:	2	3	4	5	6	7	8	9	10	11
Quality	.71	.58	.48	.75	.73	.67	.84	.68	.82	.71
Reading Fluency	.05	.38	.29	.19	.36	.25	.26	.04	.37	.17
					Quality					
WEEK:	2	3	4	5	6	7	8	9	10	11
Reading Fluency	.11	.22	.21	.13	-.03	.06	.21	.07	.36	.33

Predicting Quality from Quantitative Measures

Finally, regression analysis was completed to determine which variables were most predictive of retell quality (see Table 5). Three of these variables were computed directly from the retell (total number of words spoken, unique words, and idea units); oral reading fluency also was added to the analysis. At both pre and post intervals, different beta weights were found for the variables. At weeks 2 and 3, the number of words spoken was most predictive whether considered in isolation or in combination with the other variables; oral reading fluency also made a significant contribution. Together, all four variables accounted for 89% of the judgment variance. However, by the end of the interval (weeks 10 and 11), only the number of idea units produced was significantly predictive of retell quality. Again, this finding occurred whether the variable was considered in isolation or in combination with the other variables. Much less of the judgment was accounted for; only 52% was explained by all four variables.

Table 5. Summary of Regression Analysis using Four Variables from the Pretest and Posttest (Averaged over Two Weeks) to Predict Judgments of Retells

Administration/Variables	Std. Coeff.	*t*-value	Probability	Partial F
Pretest[1]				
Words Spoken	.60	1.8	.08	3.4
Reading Fluency	.22	2.4	.02	5.8
Idea Units	.17	1.4	.18	1.9
Unique Words	.14	0.4	.66	0.2
Posttest Variables[2]				
Words Spoken	-.02	.08	.93	.01
Unique Words	.27	.87	.39	.75
Idea Units	.49	2.22	.03	4.92
Reading Fluency	.07	.48	.63	.23

[1] $F = 30.4$, P=.0001, R=.90
[2] $F = 7.8$, p=.0002, R=.72

Discussion

The findings from this study support classroom- or curriculum-based measurement for monitoring student progress in reading comprehension. The four measures of retell and the single measure of oral reading fluency provide a sensitive metric that is responsive to student performance changes. In addition, oral retell as a measurement task also may simultaneously be effective as an independent variable. The practice of retelling seemed to lead not only to more retelling over time, but also to increased quality.

At the least inferential level, performance is orderly and changes systematically over time. The distributions (means and standard deviations) of the 35 students were generally normal, reflecting enough behavior to sample, with sufficient differences among individuals and over time to appear sensible. Students entered the 10-week period with some reading skills: They could read a story and tell it back with enough organization and detail to be considered acceptable. Neither a floor nor ceiling effect was operating. Over the 10 weeks, they improved on all measures, whether change was computed from a time-series approach or based on pre-post differences. The retell variables also correlated with sufficient regularity to reflect a singular construct related to reading. While all measures from the retell were quite highly intercorrelated, oral reading fluency appeared to be a different construct, correlating with none of the retell measures. Finally, these measures predicted retell quality and accounted for a considerable amount of the variance in such judgments; however, the variables loading into this predictiveness were different at the beginning than at the end. These findings have considerable implication for progress monitoring systems in special education.

Sensible Behaviors That Are Sensitive to Change

Most Individualized Educational Plans (IEPs) continue to be written with published, norm-referenced achievement tests as the measure of progress, even though these tests simply are not capable of such purposes. From the manner in which items are selected to the transformation of performance into a norm-referenced scale (age or grade equivalence score, standards score, or percentile rank), such tests are not appropriate for monitoring change in student performance. This problem has been well documented in the literature (Shapiro & Derr, 1987). Certainly, this issue has been raised in developing curriculum-based measurements for monitoring IEP goals (Mirkin, et al, 1981).

While alternative CBM measures have been researched and developed over the past decade, most of the reading measures have used oral reading fluency as the primary datum to monitor reading progress. Indeed, most of the CBM literature, in general, has focused on this measure. Our purpose in this study was to extend the logic of a CBM approach to student progress monitoring with a different measure of reading. In part, we hoped to find a

measure that would have more "face validity" (Salvia & Ysseldyke, 1991). While many research studies support the criterion validity of oral reading fluency (Marston, 1989), many teachers, nevertheless, express reticence in using fluency as a primary measure of reading (Yell, Deno, & Marston, 1993). More importantly, however, we were interested in capturing reading behaviors that fit theoretically into current views of reading with elaborated construct validity. Though the debate over phonics continues to rage (e.g., whether to use meaning- or code-based programs) (Adams, 1991), another major controversy in reading focuses on comprehension. The field is marked by disagreement, and few measures have properties that can be used in a time-series design to monitor progress.

Most definitions of comprehension involve high inference constructs that focus on products or processes. Corresponding approaches to assessment of reading comprehension "embody an assumption that reading comprehension is a product of a reader's interaction with a text. This product is stored in the reader's memory and may be examined by convincing the reader to express relevant segments of the stored material..The product position implies that long-term memory plays a large part in comprehension, determining how 'successful' the reader is at comprehensing..In contrast, Carroll (1971) contends that comprehension is a process which occurs immediately on reception of information and that only short term memory is involved" (Johnston, 1983). Johnston summarizes a final perspective in which memory and comprehension are intermixed, and both product and process are involved in comprehension. That is, memory of text is enhanced by comprehension of it.

These, and most other contemporary definitions emphasize student construction of meaning, incorporating student background information with that imparted by the author. Regardless of definition or theoretical persuasion, comprehension is clearly viewed as arising *through* the student rather than established a-priori from the passage text itself. And, although many complex inferences are made regarding the content of student responses (which often needs to involve some manipulation of information, rather than rote recall), little question exists about the relevance and influence of both memory and student inferences of meaning.

In the current study, we established a measurement system that incorporated such a perspective. Using a production response, we directed students to tell back the story in their own words. The advantage of such a response is that students are free to use whatever words and descriptions they believe are relevant. Using a summarization response, comparisons can be made with the extant text to determine what should be counted. In our study, we considered two primary measures that were text-bound: idea units and unique words (some of which were unique to the passage and others of which were simply low frequency words). We also counted the sheer number of words spoken as a base for describing student performance.

However, rather than simply assuming that relevant behaviors were being sampled, two criterion validation measures were administered also, including both a qualitative judgment of the retell and an oral reading fluency of the passage. While the correlations among idea units, unique words, words spoken, and judged quality were at least moderately high, no such relationships were found between any of the retell measures and oral fluency. This latter finding is contrary to much of the earlier research done in CBM, where ORF has typically correlated quite highly with comprehension measures. However, in most of this research, the criterion measure was a published, norm-referenced achievement test. Only in the study by Fuchs, Fuchs, and Maxwell (1988) was a retell used. In their study, however, the correlations were much stronger between ORF and several retell production measures than they were in our study.

The measures we investigated not only formed a consistent construct that could be considered comprehension (at least in some manner), but the measures also were sensitive to change over time. Given the brevity and the indirectness of any instructional intervention, students improved considerably. Ten weeks is certainly not much time to expect significant changes in such a complex construct as reading comprehension. Results of this study indicate that recalling factual material aids comprehension as well as improves retells, similar to studies using recalls of narrative stories as an aid to comprehension and to improve retells (e.g. Morrow, 1985). In this study, the instructional time in the classroom did not focus directly on teaching students how to retell passages. Instead, the instruction consisted of teaching new decoding skills, meanings of new vocabulary, oral reading fluency, and answering questions about narrative passages that were read orally. However, as part of the study, the students did receive one model, and practice and feedback on retelling. They also received weekly directions reminding them to remember what they read and to tell the important ideas.

The practice of retelling over time led to some important results. Students not only improved in the number of idea units contained in their retells, but by the end of the study, this measure was significantly predictive of retell quality. One could infer that weekly reminders to tell the important ideas led students to learn that telling a lot was not sufficient; rather telling the important ideas was the desired performance goal.

In part, the measures may have reflected changes simply because of their scaling properties. For example, the number of words spoken or unique words appearing in the retell has considerable sensitivity (has a great range, can be implemented and modified easily by the student, and has an appropriate distribution...mean and standard deviation). These measures probably work in the retell somewhat like letters in correct sequence work in spelling. They simply allow more opportunity for change to occur due to their scaling. However, even the number of idea units appeared to improve considerably, a measure that has few of these scaling properties. This measure is a complex combination of many words used to express information in a generally grammatically correct fashion. Opportunity to

improve is markedly less than that for words spoken or unique words used. Though no previous research has been conducted on such a measure for monitoring progress, Hunt (1965) completed a cross-sectional analysis of "terminal units" (T-units) when investigating syntactic maturity. He found significant differences in the number of T-units between the average student in grades 5, 8 and 11 and adults (both average and above average). However, while the differences may have been statistically significant, they can hardly be considered practical with the change generally being about 1.2 T-units per year between the groups. And in a related study of written expression, where idea units were used to monitor student progress, Tindal and Parker (1989) found no consistent improvements over time. In the latter study, though the number of measurements was less (with only 4 writing samples obtained), the time interval between them was greater, spanning the entire school year; thus the opportunity to show growth should have been greater than in this study.

Certainly, the study results were not driven by the problem of diagnosing comprehension under inadequate conditions. For example, Schell (1988, p. 15) recommends that we..." may need to be more precise in our language...should evaluate comprehension only in material in which the reader can produce words with at least 90% accuracy...must evaluate comprehension only in material whose language structure and concept load approximate those of the reader...must diagnose comprehension over a period of time under a variety of conditions if diagnosis is to be valid...".

In general, we can assume that such factors were not at play in the current study. In fact, student's recall was being assessed (which may or may not be synonymous with comprehension), their oral reading fluency was adequate, the language structure was easy, and assessments were done over 10 weeks with alternate forms of expository text.

Limitations and Implications

Before implementing a progress monitoring system for reading comprehension as a matter of practice, teachers need to understand the limitations of this study. Students were in third and fourth grade, an age which may make the procedures in this study particularly appropriate. The average student in this study was actually reading reasonably well (around 90-100 words correct per minute). This performance level is just below the 75th percentile rank among a broad sample of other students at this grade (Hasbrouck & Tindal, 1992). However, with young students or those with severe learning disabilities who are just learning to read, oral retells may not be sensible or sensitive. For them, reading may not be automatic (Samuels, 1983) and progress monitoring systems should then be oriented around reading fluency. When students are much more dysfluent, comprehension monitoring may be moot.

The passages in this study were relatively short and well-controlled, both in terms of readability and text structure. The findings may not generalize to

longer and more complex text. Certainly, as students begin reading books with highly content-specific vocabulary and more intricate text structure, changes in performance may be less obvious. At the very least, the frequency of measurement needs to be aligned with such text; once per week may be inadequate.

The most significant limitation relates to the methods used in this study, which may not lend themselves to wide-spread adoption. Though the actual administration and scoring time was negligible, the analysis was quite involved. We tape recorded each student and then transcribed the retell, which was subsequently analyzed for word production and judgments. Most teachers cannot adopt such intricate procedures. However, in cases where fluency is not appropriate and fails to reflect change (e.g., a ceiling effect is reached), the procedures used in this study may be very suitable. In such circumstances, teachers should make any necessary adaptations in the procedures to allow their frequent use (in how passages are selected and the retell is administered and scored).

Finally, it is assumed that some connection exists between the instructional program and the measurement system. Although not an explicit focus in this study, students were consistently taught decoding skills and story elements through questions asked during oral and independent reading. The passages used to monitor progress were not sampled directly from the exact curriculum of instruction and represented expository rather than narrative forms of reading. Such a loose linkage between instruction and measurement may actually have limited observed changes in performance.

In summary, few measures of comprehension are currently available for teachers to monitor progress. The findings from this study indicate that comprehension can be monitored quite sufficiently to reveal changes over a relatively short time interval. Given the generally high relationship among the various retell measures, any one of them may be considered: students who perform well on any of these measures is likely to perform well on any other. Probably the easiest to count is the number of words spoken; this measure correlated well with the number of unique words, idea units, and perceived quality. However, as a backup for reporting to others (parents and teachers), a judgment of quality with well-defined anchors or a comparison of idea units against the teacher's list of idea units may be useful. In contrast, the number of words read correctly may need to be monitored separately however, high performance on this measure does not connote high performance on the retell measures.

References

Adams, M. J. (1991). *Beginning to read: Thinking and learning about print.* University of Illinois at Urbana-Champaign: Center for the Study of Reading.

Bower, G. H. (1976). Experiments on story understanding and recall. *Quarterly Journal of Experimental Psychology, 28,* 511-534.

Brennan, A. D., Bridge, C. A., & Winograd, P. N. (1986). The effects of structural variation on children's recall of basal reader stories. *Reading Research Quarterly, 21*(1), 91-103.

Brown, H. A. (1914). The measurement of the efficiency of instruction in reading. *Elementary School Teacher, 14,* 477-490.

Carroll, J. B. (1971). *Learning from verbal discourse in educational media: A review of the literature.* ERIC Reproduction Document Number ED 058 771.

Clark, C. H. (1982). Assessing free recall. *The Reading Teacher, 33,* 434-439.

Davey, B. (1989). Assessing comprehension: Selected interactions of task and reader. *The Reading Teacher, 42,* 694-697.

Evans, R., & Ballance, C. (1980). A comparison of sentence connective recall by two populations of readers. *Journal of Educational Research, 73*(6), 324-330.

Farr, R., & Carey, R. F. (1986). *Reading: What can be measured?* Newark, DE: International Reading Association.

Fuchs, L. S., Fuchs, D., & Maxwell, L. (1988). The validity of informal reading comprehension measures. *Remedial and Special Education, 9*(2), 20-28.

Gambrell, L. B., Pfeiffer, W., & Wilson, R. (1985). The effects of retelling upon reading comprehension and recall of text information. *Journal of Educational Research, 78,* 216-220.

Hasbrouck, J., & Tindal, G. (1992). Curriculum-based oral reading fluency norms for students in grades 2-5. *Teaching Exceptional Children, 24*(3), 41-44.

Hunt, K. L. (1965). *Grammatical structures written at three grade levels.* (NCTE Research Report No. 3). Urbana, IL: National Council for Teachers of English.

Irwin, P. A., & Mitchell, J. N. (1983). A procedure for assessing the richness of retellings. *Journal of Reading, 26,* 391-396.

Johnston, P. H. (1983). *Reading comprehension assessment: A cognitive basis.* Newark, DE: International Reading Association.

Kalmbach, J. R. (1986a). Evaluating informal methods for the assessment of retellings. *Journal of Reading, 28,* 119-127.

Kalmbach, J. R. (1986b). Getting at the point of retellings. *Journal of Reading, 29,* 326-333.

Kameenui, E., Carnine, D., Freschi, R. (1982). Effects of text construction and instruction procedures for teaching word meanings on comprehension and recall. *Reading Research Quarterly, 17*(3), 367-388.

Mandler, J. M., & Johnson, N. S. (1977). Remembrance of things parsed: Story grammar and recall. *Cognitive Psychology, 9,* 111-151.

Marshall, N. (1983). Using story grammar to assess reading comprehension. *The Reading Teacher, 33,* 616-618.

Marston, D. B. (1989). Curriculum-based measurement approach to assessing academic performance: What it is and why do it. In M. Shinn (Ed.), *Curriculum-based measurement: Assessing special children* (pp 18-78). New York: Guilford Press.

Mirkin, P. K., Deno, S. L., Fuchs, L. S., Wesson, C.Tindal, G., Marston, D., & Kuehnle, K. (1981). *Procedures to develop and monitor progress on IEP goals.* Mpls: University of Minnesota, Institute for Research on Learning Disabilities.

McConaughy, S. H. (1985). Good and poor readers' comprehension of story structure across different input and output modalities. *Reading Research Quarterly, 20,* 219-233.

Morrow, L. M. (1986). Effects of strutural guidance in story retelling on children's dictation of original stories. *Journal of Reading Behavior, 28*(2), 135-152.

Morrow, L. M. (1985). Retelling stories: A strategy for improving young children's comprehension concept of story structure, and oral language complexity. *Elementary School Journal, 75,* 647-661.

Pellegrini, A. D., & Galda, L. G. (1982). The effects of thematic-fantasy play training on the development of children's story comprehension. *American Educational Research Journal, 19* , 443-454

Pintner, R. (1913). Oral and silent reading of fourth grade pupils. *Journal of Educational Psychology, 4,* 333-337.

Salvia, J., & Ysseldyke, J. (1991). *Assessment in special and remedial and education* (fourth edition). Boston, MA: Houghton Mifflin.

Samuels, S. J. (1983). A cognitive approach to factors influencing reading comprehension. *Journal of Educational Research, 76,* 261-266.

Schell, L. M. (1988). Dilemmas in assessing reading comprhension. *The Reading Teacher, 39,* 12-16.

Shapiro, E. S., & Derr, T. F. (1987). An examination of overlap between reading curricula and standardized achievement tests. *The Journal of Special Education, 21*(2), 59-68.

Smith, S. (1979). Retellings as measures of comprehension: A perspective. In J. Harste & R. Carey (Eds.). *New perspectives on comprehension.* Monographs in Teaching and Learning. Bloomington, IN: School of Education, Indiana University.

Smith, S. P., & Jackson, J. H. (1985). Assessing reading/learning skills with written retellings. *Journal of Reading, 28,* 622-630.

Stein, N. L., & Glenn, C. G. (1979). An analysis of story comprehension in elementary school children. In R. O. Freedle (Ed.), *New directions in discourse processing* (vol. 2, pp 53-120). Norwood, NJ: Ablex.

Taylor, B. M. (1982). A summarizing strategy to improve middle grade students' reading and writing skills. *The Reading Teacher, 36,* 202-205.

Thorndyke, R. (1977). Cognitive structures in comprehension and memory of narrative discourse. *Cognitive Psychology, 9,* 77-110.

Tindal, G.& Parker, R. (1989). Development of written retell as a curriculum-based measurement in secondary programs. *School Psychology Review, 18*(3), 328-343.

Wade, S. (1990). Using think alouds to assess comprehension. *The Reading Teacher, 43*, 442-451.

Wood, K. D. (1985). Free associational assessment: An alternative to traditional testing. *Journal of Reading, 28*, 106-111.

Yell, M. L., Deno, S. L., & Marston, D. B. (1993). Barriers to implementing curriculum-based measurement. *Diagnostique, 18*(1), 99-114.

Zimiles, H., & Kuhns, M. (1976). *A developmental study in the retention of narrative material final report* (Bank Street College of Education, Research Report 134). Washington, DC: National Institute of Education.

Appendix A

Administration Procedures

Reading Test

MATERIALS

Practice Procedures Packet

Page 2 -General Rules for Administration:
Page 2-4 -Practice Test Administration: First Day
Page 5 -flowchart
Page 6 -directions for recording decoding errors
Page 7 -student decoding test: *Poisons in the Woods*
Page 8 -tester copy; decoding test: *Poisons in the Woods*
Page 9 -tester practice copy: *Underground Fairyland*
Page 10 -tester retell (model): *Underground Fairyland*
Page 11 -student practice copy: *Mud-Ball Houses*
Page 12 -tester retell score sheet: *Mud-Ball Houses*
Page 13 -tester copy: *Mud-Ball Houses*
Page 14 -tester retell (model): *Mud-Ball Houses*

Test Procedures Packet

Page 1 -Test Administration: First and Subsequent Days
Page 2 -directions for decoding test error recording
Page 3 -list of test copies with dates for administration

-reading passage, student copies: 1 each, forms 1-12
-reading passage, tester copies: 1 each, forms 1-12

Other Materials

-90 minute audiotape
-tape recorder
-watch with sweephand, or chronograph
-writing instrument

General Rules for Administration

The test will be administered on the same day each week. The test is ideally administered at the same time each day as well. When choosing the testing day and time, consider when interruptions (from absences, assemblies, etc.) are *least* likely to occur. If you are able to predict that a testing session will not occur on the selected test day (ex: a school holiday; or you or the student will be absent), test the student during the same time period *one day earlier.* If your selected test day passes, and the test has not been administered, test the student during the same time period *on the next day. It is very important that the testing occur within one day on either side of the selected day.*

PRACTICE TEST ADMINISTRATION: FIRST DAY

The first testing session will take between fifteen and twenty-five minutes to complete. All tests thereafter will take between six and ten minutes to complete. The first test is administered in the following manner:

1. Administer this test to one student at a time. The testing should take place in a quiet, empty room. If this is not possible, choose an area of the classroom that is free from distracting noise and movement. Administer one test each week, in the order in which they appear in the test packet.
2. Sit beside the student at a table or desk.
3. Begin recording the session when both of you are seated.
4. Explain the testing procedure, following this standardized script:
   "I will have you read to me one time each week. After you read, I'll ask you to tell me about what you just read. I'll show you how to do this. First I want you to read from this page for one minute. Read quickly, but not so quickly that you make mistakes. When I say "go," start reading with the title."
5. Give the student *Student Decoding Test: Poisons in the Woods .*
6. Time student reading after the title is read. Record decoding errors on *Tester Copy: Decoding Test: Poisons in the Woods:* Stop the student after he reads for one minute. Mark a slash on the tester copy at the point where the student stopped reading.
7. Record student errors and on the top of the tester copy.

DECISION POINT: DISCONTINUE TESTING IF THE STUDENT READS MORE QUICKLY THAN 150 WPM (too high), OR MAKES 21 OR MORE ERRORS (too low). IF THE STUDENT READS LESS THAN 150 WORDS PER MINUTE, AND MAKES LESS THAN 21 ERRORS, GO TO STEP 8.

8. Begin model retell procedure. Say the following:
   "For the rest of the reading we do each week, I will ask you to read and then tell me everything you can remember about what you just read. I'll show you how to do this now. First I will read out loud, then I'll show you how I tell about what I just read. While I read I try to remember important facts. I try to remember things in the order they happened. I also try to remember as many details as I can. Listen as I read: "
9. Read aloud from the passage entitled *Tester Practice Copy: Underground Fairyland.*
10. Say the following:
    "Now I think for a moment about what I just read. "
    (wait $\geq$ 5 seconds)
11. Retell the passage, following the script entitled: *Tester Retell:(model) Underground Fairyland.*
12. Give the student *Student Practice Copy: Mud-Ball Houses.*

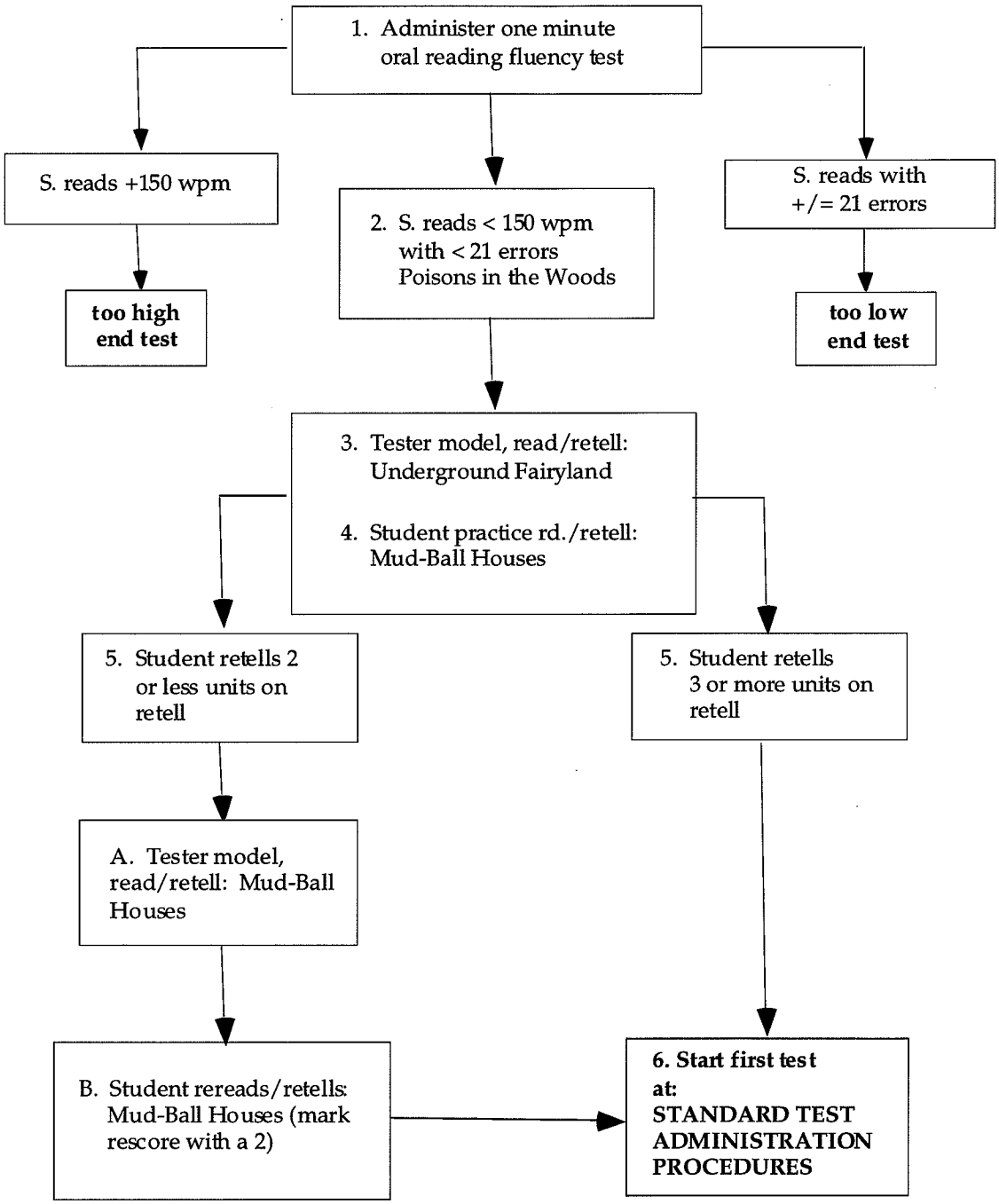
13. Say the following:
    "Now it's your turn to practice one. Read this passage aloud. Get ready to tell me about what you remember. As you read, think about the important ideas, the order in which things are told, and as many facts as you can remember. You may start with the title and begin reading. "
14. When the student has finished reading, instruct the student to retell what he has read. Say the following:
    "Now I want you to think about what you just read. After you think for about five seconds, I want you to tell me everything you can remember from the page you just read. (Pause for five seconds). *Now tell me everything you remember about what you just read."*
15. As the student retells the passage, score responses on *Tester Retell Score Sheet*: *Mud-Ball Houses:*

DECISION POINT: IF THE STUDENT SCORES 2 OR LESS OF THE UNITS, GO TO STEP 16 BELOW. IF THE STUDENT SCORES 3 OR MORE OF THE OF THE UNITS ON THE TESTER SCORE SHEET, PROCEED WITH TEST ADMINISTRATION: FIRST AND SUBSEQUENT DAYS.

16. If the student scores 2 or less of the units, say the following:
    "Listen to how I would retell that information. First I'll read the page and try to remember the important ideas (Read *Tester Copy: Mud-Ball Houses* aloud). *Now I'll show you how I retell what I just read* (Follow script for *Tester Retell (model) : Mud-Ball Houses)."*
17. Instruct the student to read and retell again, by saying the following:
    "Now it's your turn. Read the page again and try to remember the important ideas. When you're done I'll ask you to tell me all you can remember about what you just read."
18. Give the student *Student practice copy: Mud-Ball Houses*. When the student has finished reading, instruct the student to retell what he has read. Say the following:
    "Now I want you to think about what you just read. After you think for about five seconds, I want you to tell me everything you can remember from the page you just read. (Pause for five seconds). *Now tell me everything you remember about what you just read."*

This is the end of the practice session for day 1.

Test Administration Procedures: First Day



Student Copy: Poisons in the Woods

Poisons in the Woods

Posion ivy and poison oak grow in may sections of our country. There is a great deal of poison oak found on the West Coast. It is found in the southern and central states as well.

On the leaves of both plants is an oil that contains the poison. If part of your body touches the plants, the oil sticks to your skin. The poison makes your skin itch. Sometimes, just the smoke from a burning plant can bother you.

Rubbing or scratching the poisoned places helps grind the poison oil into the skin. You need plenty of water and good strong laundry soap to remove the oil.

It is good to know about these poison plants. It is also good to know that some plants can help stop the itching. The juice from jewelweed or sweet ferns can be very soothing. It seems that we can find sickness and cures in the same forest!

Tester Copy: Poisons in the Woods

Student Code _____

Time _____

Errors _____

Date _____

Poisons in the Woods

Posion ivy and poison oak grow in many sections of our country. There is a 15
great deal of poison oak found on the West Coast. It is found in the southern and 32
central states as well. 36

On the leaves of both plants is an oil that contains the poison. If part of your 53
body touches the plants, the oil sticks to your skin. The poison makes your skin 68
itch. Sometimes, just the smoke from a burning plant can bother you. 80

Rubbing or scratching the poisoned places helps grind the poison oil into the 93
skin. You need plenty of water and good strong laundry soap to remove the oil. 108

It is good to know about these poison plants. It is also good to know that some 125
plants can help stop the itching. The juice from jewelweed or sweet ferns can be 140
very soothing. It seems that we can find sickness and cures in the same forest! 155

Tester Directions: Underground Fairyland

First I tell the main idea:

This story tells all about salt.

Then I tell more facts about the main idea. I tell what I remember in order.

Most salt comes from deep underground.
It is dug up from mines.
These mines look like a fairyland.

Now I tell more details in order. Listen:
Some salt comes from wells.
These wells are like water wells.
The salt is carried out of these wells in pipes.

In some places, salt is made from ocean water.
A bowl is dug in the ground.
It is filled with ocean salt water.
When the water dries up, salt is left on the ground.
People and animals need salt to live.

I told about the main idea and all the important facts. I told what I remembered in the order that it was in when I read it. Did you remember a lot of the same things I did? Good.

Student Copy: Underground Fairyland

Underground Fairyland

Most of the salt we use comes from salt mines under the ground. Sometimes people must dig very deep to find it. Salt is white and clean and beautiful. A salt mine looks like a fairyland.

We get salt from salt wells, to. A salt well is much like a deep water well. The salt is brought to the top in pipes.

In some countries, people get salt from the sea. They dig great bowls and fill them with sea water. When the sun dries up the water, the salt is left on the ground.

People need salt. Animals need salt, too. We could not live without it.

Tester Copy: Underground Fairyland

Underground Fairyland

Most of the salt we use comes from salt mines under the ground. Sometimes 14
people must dig very deep to find it. Salt is white and clean and beautiful. A 30
salt mine looks like a fairyland. 36

We get salt from salt wells, to. A salt well is much like a deep water well. 53
The salt is brought to the top in pipes. 62

In some countries, people get salt from the sea. They dig great bowls and fill 77
them with sea water. When the sun dries up the water, the salt is left on the 94
ground. 95

People need salt. Animals need salt, too. We could not live without it. 108

Tester Directions: Mud-Ball Houses

First I tell the main idea:

This story tells how wasps make their homes.

Then I tell more important information about the main idea. I tell what I remember in order.

There are many kinds of wasps.
One kind uses mud for his house.
He rolls mud up in little balls with his feet, and then
he carries the balls to where he wants to build his house.

Now I tell more details in order. Listen:

-It takes a lot of trips to carry all the mud balls.
-The mud is very hard when it dries out.
-Rain can't hurt it, and wind can't hurt it either.
-The wasp fills up the house with food when it is finished.
-Wasps like to use spiders for their food.
-The wasps sting all the spiders they need.
-It's time to lay the eggs when the nest is full of food.
-In some places, salt is made from ocean water.
-A bowl is dug in the ground.
-It is filled with ocean salt water.
-When the water dries up, salt is left on the ground.
-People and animals need salt to live.

I told about the main idea and all the important facts. I told what I remembered in the order that it was in when I read it. Did you remember a lot of the same things I did? Good. Your turn.

Student Copy: Mud-Ball Houses

Mud-Ball Houses

There are many kinds of wasps. One kind uses mud to build its home. It rolls mud into little balls with its legs and mouth. It carries the mud balls to its nesting place. Then it goes back many times for more mud. When the wet mud dries, it is hard. It is very, very strong. Rain cannot wash it away. Wind cannnot break it. Now the wasp fills its home with food. Spiders are good food to a wasp. The wasp can sting as many spiders as it needs. It carries them home to its new mud house. Now everything is ready. It is time for the wasp to lay its eggs.

Tester Copy: Mud-Ball Houses

Mud-Ball Houses

There are many kinds of wasps. One kind uses mud to build its home. It rolls 16
mud into little balls with its legs and mouth. It carries the mud balls to its 32
nesting place. Then it goes back many times for more mud. When the wet mud 47
dries, it is hard. It is very, very strong. Rain cannot wash it away. Wind 62
cannnot break it. Now the wasp fills its home with food. Spiders are good food 77
to a wasp. The wasp can sting as many spiders as it needs. It carries them home 94
to its new mud house. Now everything is ready. It is time for the wasp to lay 111
its eggs. 113

Tester Score Sheet: Mud-Ball Houses

1 ___This is about wasps that make mud homes {main idea}.

2 ___There are many kids of wasps.

3 ___One kind uses mud to make his house.

4 ___He rolls mud up in little balls with his feet

5 ___and then carries it to where he wants to build.

6 ___This takes a lot of trips.

7 ___When the mud dries it is very hard.

8 ___Rain and wind can't hurt it.

9 ___When the house is done, the wasps fill it with food.

10___Wasps use spiders for food.

11___They sting as many [spiders] as they need.

12___When the nest is full of food, it's time to lay the eggs.

Appendix B

Protocols & Retell Scoring

A Nearly Perfect Food

Milk is considered the most nearly perfect of all foods. Because it contains most of the 16
elements the body needs, most people could live on milk alone for some time. 30
In addition to containing things that the body needs, milk contains them in a form that is 47
easy to use. There is fat in milk. We often get this fat in the form of butter or from 67
drinking whole milk or cream. Milk also contains sugar and protein, both of which are 82
necessary to the body. Cheese and yogurt also give us these needed foods. 95
In desert countries, people get milk from camels. The nomad Lapps drink reindeer milk. 108
In such countries as Switzerland, much milk comes from goats. In the United States, 122
most milk comes from cows. Because there are many cows in the United States, many 137
liters (gallons) of milk are available for every person. Although everyone cannot drink 150
cow's milk, most of us might be healthier if we drank more milk. 163

1 Main Idea: Milk is an important food
2. Milk contains most things the body needs
3. People could live on milk for a long time
4. Milk has things in a form easy to use
5. There is fat in milk
6. Get fat from butter/milk/cream
7. Millk contains sugar/protein
8. Milk/protein necessary to the body
9. Cheese/yogurt give us these needed foods
10. In desert, people get milk from camels
11. Nomads/Lapps drink reindeer milk
12. Switzerland/other countries get milk from goats
13. U.S., milk from cows
14. Many cows, so many liters/gallons of milk
15. Everyone can't drink cow's milk
16. Most would be healthier if drank cow's milk

How We Hear

Our ears are really like fine instruments. They need to be guarded. The part of the ear 17
that we see is the outer ear. It helps to catch sound. Sound passes through the opening 34
to the middle ear. 38
At the beginning of the middle ear is the eardrum. Within the middle ear are little bones 55
that help to carry sound. A passage leads from the middle ear to the back part of the 73
nose and upper part of the throat. It is like a little tunnel or a water pipe, about as big as 94
a big paper clip. 98
Beyond the middle ear is the inner ear. In the inner ear, there is a nerve that acts like an 118
electric wire. It carries sound to the brain. All parts of the ear are very delicate. They can 136
be easily damaged. 139

1. Main Idea: This is about ears/how we hear
2. Ears are like instruments
3. Ears need to be guarded
4. We see outer ear
5. Outer ear catches sound
6. Sound passes to inner ear
7. In middle ear is ear drum
8. In middle ear are bones that carry sound
9. Passage goes from middle ear to throat/nose
10. Passage like tunnel/water pipe
11. Passage as big as paper clip
12. After middle ear is inner ear
13. Inner ear has a nerve
14. Nerve acts like electric wire
15. Nerve carries sound to brain
16. Ear is delicate
17. Ear can be easily damaged

Animal Doctors

Do you have a pet? Do you like to take care of animals? 13

Girls and boys who like animals may want to study to be veterinarians. Veterinarians, 27

often called "vets", are animal doctors. Many work in animal hospitals. Others may work 41

on farms or at a zoo. Some study animal diseases and try to find ways to keep the 59

animals from getting sick. They search for medicine to cure sick animals. 71

Vets are like regular doctors. They listen to an animal's heart. They check its ears, eyes, 87

mouth and blood. They operate when they need to. They may give the animal shots 102

and tell the pet's owner what diet is best. 111

Girls and boys who want to be vets should plan to go to college for two years and then to 131

vet school for four years more. 137

1. Main Idea: This is about veterinarians
2. People who like animals may want to become vets
3. Veterinarians are often called "vets"
4. Vets are animal doctors
5. Vets work in animal hospitals
6. Vets work on farms
7. Vets work in zoos
8. Vets study animal diseases/find ways to keep animals from getting sick
9. Vets search for medicine
10. Vets are like regular doctors
11. Vets listen to an animals heart
12. Vets check ears/eyes/mouth/blood
13. Vets operate
14. Vets give shots
15. Vets tell owners best diet
16. To be a vet go to college 2 years
17. To be a vet go to vet school 4 years more

Grasses We Eat

Did you know there are many kinds of grasses? Some grasses are short. Some are 15
tall. The kind that grows around your house is a short grass. But field grasses often 31
grow as tall as a man or woman. 39
Some foods that we eat come from plants of the grass family. Wheat and rice are two 56
of them. We use wheat to make bread. We use both wheat and rice to make breakfast 73
foods. In some lands, people eat more rice than any other food. 85
Animals as well as people get food from the grass family. Cows eat hay. Do you know 102
the kind of grass that horses like to eat? 111

1. Main Idea: This is about grass
2. There are many kinds of grasses
3. There are short grasses
4. There are tall grasses
5. Around your house is short grass
6. Field grass tall as a man/woman
7. We eat grass foods
8. What is a grass/rice is a grass
9. Wheat is for bread
10. Wheat/rice used for breakfast foods
11. Some people eat more rice than any other food
12. Animals get food from the grasses
13. Cows eat hay
14. Horses eat a grass/what kind of grass do horses eat

Chewing Gum Trees

Did you know that chewing gum comes from trees? It comes from a kind of juice	16
that we call sap. The tree that gives us chewing gum sap grows in hot countries.	32
To get the sap, a person climbs the tree. The climber ties a bag to the trunk. A cut	51
is made in the tree. The cut goes all around the tree. The sap runs down the cut.	69
It runs into the bag. The sap is white, like milk.	80
After the sap is cooked, it becomes sweet. Then it is rolled out. Last, it is cut into	98
sticks.	99
Next time you have chewing gum, will you think of all these things?	112

1. Main Idea: This is about making chewing gum
2. Chewing gum comes from trees
3. It comes from sap
4. Sap grows in hot countries
5. To get sap, a person climbs a tree
6. Person ties bag to trunk
7. Person makes a cut/ a cut is made
8. Cut goes around tree
9. Sap runs down cut
10. Sap runs into bag
11. Sap is white/ sap looks like milk
12. Sap is then cooked
13. Sap becomes sweet when cooked
14. Sap is rolled out
15. Sap is cut into sticks
16. Next time you have gum you can think of these things/ next time you have gum will you think of all these things?

A Great Traveler

When winter comes, great flocks of birds fly away to lands that are warm. Most birds fly 17
many miles each year. They go back and forth to places where there is sunshine. But 33
the bird that flies the farthest is the arctic tern. 43
In the summer, the arctic tern lives very near the North Pole. Here the sun shines 59
twenty-four hours in the summer. There is no night at all. But in the fall, the tern flies 77
south. It keeps going until it gets all the way to the South Pole. Here again, it has 105
twenty-four hours of sunlight every day. 111
When the season changes, the arctic tern goes back to the North Pole again. The arctic 127
tern travels thirty-five thousand two hundred kilometers (twenty-two thousand miles) 137
every year. It is a great bird traveler. 145

1. Main Idea: This is about the arctic tern/ This is about a bird that flies very far every year
2. When winter comes, birds fly to warm lands
3. Birds fly many miles
4. They go back and forth to warm places
5. Arctic tern flies farthest
6. A.T. lives near N. Pole in summer
7. Sun shines 24 hrs
8. There is no night
9. A.T. flies south in the fall
10. A.T. flies to the south pole
11. Here sun shines 24 hr/day
12. When season changes A.T. goes back to N. Pole
13. A.T. flies far every year
14. A.T. is a great bird traveler

Stand Up to Write

As soon as they were able, the pioneer farmers in a new country built log 15
schoolhouses. Their children were sent to school during the winter months. Often the 28
frontier school had only one room. The young children and the older ones shared the 43
room. These pioneer schoolhouses were many different shapes and sizes. 53
Here is what you might have seen in a typical schoolhouse in the Oregon Territory. At 69
one end was a big fireplace. It had a chimney built of sticks and mud. Across the room, 87
opposite the fireplace, was the door. Just outside the door was a bench that held a 103
bucket of water. Beside the bucket was a dipper from which all the children drank. 118
Benches made of logs split into halves ran along two sides of the room. The rough log 135
walls formed the bench backs. On the other wall of the room was a long, wide shelf. 152
When the children needed to write, they put their slates on the shelf and wrote standing 168
up. 169

1. Main Idea: This tells about pioneer schoolhouses
2. Pioneers/ pioneer farmers built school houses
3. Children went to school in the winter
4. Many schools had one room.
5. Young and old children shared the room
6. Schoolhouses came in many shapes/sizes
7. Schoolhouses/ School houses in the Oregon Country had a large fireplace
8. Chimney was built of sticks and mud.
9. Opposite the fireplace/Across the room from the fireplace was the door
10. Outside the door was a bench
11. Bench held a bucket of water
12. Beside bucket was a dipper
13. Children drank from dipper
14. Benches were made of logs split in half
15. Benches were along 2 side of the room
16. Log walls formed bench backs
17. On other wall was shelf
18. When writing, children put slates on shelf
19. Children wrote standing up

In A New Land

In the late 1800's, many people left their countries for different reasons. They all hoped 14
to find a better life in America. 21
One of the first problems they faced was work. In order to work, they had to speak 38
English. They could do very well in their own neighborhoods. There, they spoke their 52
own language. But on the job, they had to speak the new language. Without English, 67
they could not understand the rules and laws of their new country. 79
Even so, many of these people wanted to keep their own language and habits in their 95
homes. Sometimes the language changes were a problem for their children. The 107
young ones went to American schools. They had to learn the new ways. More and 122
more, they became part of the American way of life. But often their parents did not. 138
Sometimes the children were ashamed because their parents still dressed and talked 150
as they had in the old country. The problems of learning to live happily in the new land 168
were often difficult for these families to work out. 177

1. Main Idea: People who moved to a new country had to adjust
2. Late 1800's, people left country
3. People wanted better life in America
4. Getting work was a problem
5. To work people had to speak English
6. People did well in own neighborhoods
7. People spoke their own language there
8. On the job they had to speak a new language/English
9. Without English, people could understand rules/laws
10. Many people wanted to keep own language/customs at home
11. Language changes were a problem for children
12. Young people went to American schools
13. Young people had to learn the new ways
14. Young people became part of American way of life/ America
15. Often their parents did not
16. Young people were ashamed because parents were same as in the old country
17. Problems in the new land/America were hard for families to work out

Tumblebugs

Have you ever seen two tumblebugs pushing a ball down a country road? This really 15
happens. The tumblebugs are beetles, and they are not only playing a game with the 30
ball. One of the beetles is in front of the ball and one is behind it. They push and pull in 51
a manner that you would never expect. Sometimes, both of them fall over, but they keep 67
at their jobs. Finally, they find a moist spot in the ground. Here they dig a hole with their 86
feet. They put the ball into the hole, cover it up, and leave, never to return. 102
Whey do you suppose tumblebugs do all this? The ball is composed of waste material 117
left in the barnyard or on the stable floor by animals. In this ball, the mother tumblebug 134
has lain eggs. Warm and safe inside the ball, the baby tumblebugs live on the waste 150
material until they are big enough to come to the top of the ground. 164

1. Main Idea: This is about tumblebugs
2. Tumblebugs push a ball down a road/have you seen tumblebugs push a ball down a road?
3. This really happens
4. Tumblebugs are beetles
5. They are not only playing a game with the ball
6. One beetle is in front, one is behind the ball
7. They push/pull in funny ways
8. Sometimes both bugs fall over
9. Tumblebugs keep at their job
10. They find a spot in the ground
11. They dig a hole
12. They put the ball in the hole
13. They cover it up
14. They leave, never to return
15. The ball is made of waste
16. The waste is left by animals
17. Mother tumblebug has lain eggs in the ball
18. Baby tumblebugs are warm/safe in the ball
19. Baby tumblebugs live on waste until they are big
20. Until they are big enough to come to the top of the ground

Lending a Hand

In New England, pioneers often built their cabins close together for protection against 13
wild animals and human enemies. But, farther to the west, pioneers' cabins often were 27
built far apart. 30
When it was time to build a house, neighbors came from far and near to help. They cut 48
down trees. Then the logs were notched to fit together tightly. Everybody worked. The 62
strongest people lifted the logs into place. Some carved wooden pegs to serve as 76
nails. Others plugged the spaces between the logs with clay, mud, and moss. 88
When the roof was finally on, it was time for a feast. There were games, contests, and 105
story telling. Usually, someone would bring a fiddle. Then there would be dancing and 119
singing until late at night. A house-raising was a time for hard work and hard play, too! 136

1. Main Idea: This is about building log cabins
2. In New England, pioneers build cabins close together
3. For protection
4. In the west, pioneers built cabins farther apart
5. When it was time to build, neighbors came from far and near
6. They cut down trees
7. Logs were notched to fit together
8. Everybody worked
9. Strongest people lifted logs into place
10. People carved pegs for nails
11. People plugged spaces between logs with clay/mud/moss
12. When roof on/house done, time for feast
13. They had games/contests/ storytelling
14. Usually someone would bring a fiddle
15. There would be dancing and singing until late
16. Houseraising was a time for hard work and hard play, too

Appendix C

Student Retell Samples

Low Scores

Mike: Grade 3 (Regular Ed)

A Nearly Perfect Food
Milk is UNK to the I forget where it was milk has fat and like cheese and and cheese milk is in such lands as Switzerland and people do not drink cows milk um huh milk is all over the United States milk is UNK that's it

How We Hear
Ears are are like instruments ears um need to be guarded and and and the ear drums and little bones that make passages that's all

Animal Doctors
Ok vets cure pets of UNK vets might give the pet their shot some boys and girls want to be a veterenarian when they grow up vets work at a zoo vets are animal doctors thats all I can remember

Grass We Eat
Grass grows short and tall wheat and corn belongs to the grass family a lot of countries eat rice grass is your behind your house is short and fields are tall thats all I can remember

Chewing Gum Trees
Do you know chewing gum comes from trees it comes from the thing called snap snap grows on trees snap is cooked and rolled and then cut into sticks they cut the tree all over and then the snap comes um in the cracks and then goes in the bag a man climbs the tree thats all I can remember

A Great Traveler
Many bird flys south to the winter uh UNK I said pass was one is a great bird that travels back and forth many times in the north pole its its sunny for 25 hours and in the fall it is without light the end of fall just theres night and it goes to the south pole for 25 hours of light and fall it goes back and forth thats all I can remember

Standing Up to Write
Um the early pioneer farmers came and built straw houses theres only one room and the big kids had to share with all the little kids they had um there was a log bench theres a bucket of water with a dip in the side and all the children had to drink from it and when they had to write they UNK said stand up and put it on the wall and write thats all I can remember

A New Land
In the late 1800's people left their own countries for reasons they these the people had a problem because they had to work and because they had to uh speak English to understand the laws um children were ashamed because their parents were teaching school and speaking the old language thats all I can remember

Tumble Bugs
Tumble bugs push and pull on the ball and um they find a moist spot and they bury it enough to be seen again have you ever seen two tumble bugs thats all I can remember

Lending A Hand
Ok pioneers usually worked together to build cabins when they are done they feast they have games contests um and if someone brought a fiddle there would be singing and dancing thats all I can remember

Robert: Grade 4 (Special Ed)

A Nearly Perfect Food
Milk has fat in it and yogurt and other foods have milk in them and there's a lot of milk people drink milk from cows and some people drink it with cream with cream with milk in it and that's all

How We Hear
But theres an ear that goes from goes to the brain from the ears and there is a tube from the ears to the nose and the ears are very delicate and the part you can see is the outside of your ear and its as big as a um the the part the UNK the tube that go from the nose to the ear is about a big paper clip and and there's parts inside the ear are very delicate that's all I remember.

Animal Doctors
Well there vets are people who search for sickness that um medicine in animals and try to make it so that they don't get sick and they look thats all

Grasses We Eat
Ok grass grass that grows around your house is short and in in fields grass grows about as tall as a man or woman and cows eat grass and we eat cereal from it and we eat grain from the grass family um thats all

Chewing Gum Trees
Well you people climb up into trees and like make a cut in the tree and sap runs down the tree to until it reaches the ground and then you can use it and its cooked to its sweet you can make it until it sticks and its used

A Great Bird Traveler
It gets 24 hours of sunlight and stops sunshining it goes from the south pole to the north pole and thats all

Stand Up to Write
Uh the pioneers built their houses out of wood and bench had a back to it and it was made out of wood and thats all

In a New Land
In order for the jobs in the new country they had to learn the English language and the children were ashamed because the parents wore the same clothes as in the old country

Tumblebugs
Tumble bugs bury waste lay eggs inside the waste and bury it inside the ground and never return back to it and thats all

Lending a Hand
The they built their houses and the strongest men put the roof on and they filled in the cracks with moss and mud and clay and some people put poles in the wood so they would stay in place and some people put corks in to fill up the holes

High Scores

Robin: Grade 4 (Regular Ed)

A Nearly Perfect Food
No Score

How We Hear
Ears are like fi- fine instruments the ear that we see is the outer ear the sounds travel to the middle the middle ear which goes through a tube like a water pipe but the size of a large paperclip into the inner ear lets see the ear drum is a very delicate and needs to be guarded

Animal Doctors
Um animal doctors are often called veterenarians known as vets they um give your animals shots if more of them are if they are sick they tell you the right diets for your pets to go on if you want to be a veterenarian to go to college for two years and to the vet school for four years more

Grasses We Eat
Wheat and rice are made out of grass and um wheat is made is made in bread I mean bread is made from wheat some countries eat rice more than any other food cows eat hay there are many kinds of grasses short grass and tall grass thats all I can remember

Chewing Gum Trees
That chewing gum is made from sap that comes from the trees and sap is white like milk the climber that gets the sap from of the tree cuts it all around the tree sap pours into the bag sap trees come are in hot countries um when they cook the sap it turns sweet and then they cut it into sticks thats all I can remember

A Great Traveler
Uh uh artic turn is a traveling bird it lives in the in the north pole to where it is sun 24 hours a day and never night and in fall he flys down south all the way to the south pole where it also 24 sun 24 hours and never night it and then when the season changes it flys up to 22,000 miles the artic turn is a great traveling bird many birds fly south for the winter and the artic turn is the north pole

Standing Up to Write
Pioneer schoolhouses um had only one room the older kids and then younger kids had the same room there was a fireplace at one end and the other end of the fireplace was a door out and theres a hm

A New Land
When um families moved to a new country UNK but to get uh to get a new job is hard because you have to speak English and the old country is easier is an easier neighborhood because they can speak their own language children from the children went to American schools and started to live American way but sometimes they were ashamed to be with their mom their parents they would still dress like they did in the old country

Tumble Bugs
Tumble bugs roll a ball down the road tumble bugs are beetles they push and pull with their legs sometimes they fall off if they keep on they get back on and keep on with their work the ball they roll the ball from the barnyard left by animals on the ground and the mother lays here eggs in the ball and the dig a hole with their feet in a moist spot so that when they bury the ball when the babies feed on the waste until they are big enough to come on top of the ground out of the ground

Lending a Hand
In England pioneers build houses close together but pioneers farther out west build them farther their houses far apart they the strongest wait um neighbors come from far and near to help make the house the strongest people lift the logs into place moss mud and clay often are used to hold it for the roof to stop so nobody could get in and after the house is done they there would be a celebration there would be games contests usually they would bring a fiddle and there would be singing and dancing that all I remember

Chris: Grade 4 (Special Ed)

A Nearly Perfect Food
Its about milk and how its good for you and it gives the vitamins and minerals you need for to potasium uh you get the fat from the thin milk and its it also has sugar and and has lots of stuff in it for the body and some people get milk from camels and some people get milk from goats and some people get milk from cows and thats all I can remember

How We Hear
its aabout how we hear and uh you have an outer ear and an inner ear and theyre very delicate and they can be damaged easy and they theres a little like electric wire in your body and a part goes to your brain and its about its a passage and its about as big as a big paperclip and it has and it has bones that carries the sound and the like the electric wire like carries sound too it carries the sound to the brain thats all I can remember

Animal Doctors
Its about animal doctors and how they are veterenarians some are called vets and um they help animals when they are sick and they um um um if kids want to be veterenarians they should start early and study animals and go to college for two years and go to med school for four years and um that they just they are just like normal doctors they check your eyes they check the animals eyes ears mouth heart and blood that's it.

Grasses We Eat
Its about um god grasses we eat and theirs different kinds of grass for us there are some that are hay and there are some rice and horses and cows eat grass and that some people eat more grass than others hum and that the grass that we have in our yard is the short grass and the grass in the fields are sometimes as tall as a man and woman or taller that's it

Chewing Gum Trees
Its about chewing gum trees and that you get gum from trees and the climbers climb up a tree and they put a bag on the bottom of the tree and they cut a big hole that goes all the way around and the sap will go into the bag and and that they cook and and when they cook it it becomes sweet and then they cut it into sticks and they put it in the package and they let it out in the stores that's it thats all I can remember

A Great Traveler
Its about its about a bird traveler and the it tells how far it travels and what kind of bird it is and that it goes that in the summer it goes to the north pole and its and its got sunlight like 24 hours and then it goes to the south pole and its got 24 hours of sunlight it will fly a certain amount of distance every year year thats it

Standing Up to Write
Ok its about a its about a pioneer school and about how they had to stand up to write and outside they had a bucket and then on the other side of the bucket they had a dipper and they had benches they were made out of logs split in half and they had the shelf that they would put their slates on to write and their they were log school and the were the had the finish the wall of the school made the back of the bench and they had a one room and they came in all different shapes and sizes um and that the little kids and big kids shared the room thats it

A New Land
Ok its about the UNK our time and speaking English because their from a different country and they left for many different reasons and that the kids were would be ashamed of themselves sometimes because their parents would still dress and speak the same way and that they had to learn English to uh work and so they could understand the rules and laws and the kids went to kids went to a English school so they had to learn English to go there thats it

Tumble Bugs
Its about lending a hand it and also its when the houses being made the strongest people lift the logs and lift them in place and they plug the holes between with mud clay and moss and that sometimes people bring a fiddle and they have dancing and everything after the house is made and they dance until late at night and the people from far and near come to help build the house and people made wooden pegs to represent nails thats it

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