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**An Analysis of the Narrative Structure and Content Questions
in the Scott, Foresman Reading Series: Levels 5 & 6**

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In the field of speech language pathology, narratives, which are descriptions of happenings or events (Lahey, 1988), are a focus of considerable interest. Individuals produce and/or comprehend narratives for a variety of reasons. For example, narratives are used when discussing past or future events or when relaying information regarding movies, books, situations at school or home, to name but a few.

The interest in narratives grew following the discovery that all narratives follow consistent patterns that are essential for clear expression of information (Lahey, 1988). These patterns are especially evident in causal chain narratives where real or imaginary events are told with a causal connection. Patterns of this type of narrative have been analyzed and, according to the researchers Stein and Glenn (1982), can be divided into subcategories called story grammar components. These components are used to make a complete causal connection which allows stories to be coherent and understandable.

A complete causal connection, or simple causal chain, is made when a narrative includes a setting and an episode. The setting sets up the story and includes information about the characters and where the story takes place. An episode must include the following story grammar components: initiating event, attempt, and a consequence. The *initiating event* is an action, perception, or event that causes the character to do something. An *attempt* is the act the character performs because of the initiating event. The *consequence* is the success or failure of the attempt. Other components such as an *internal response* of the character, a *plan of action* of how to solve the problem, and *reaction* to the story can all be included to make the story more interesting.

While the use of many story grammar components makes for a more complex story, the way the episodes are connected also can indicate the complexity of the

narrative. According to Botvin and Sutton-Smith (1977), the most advanced level of narratives involves joining episodes into multiple causal chains. In these chains, episodes can be conjoined or embedded. If an episode is started after another is completed, then these episodes are said to be conjoined. The next level of complexity would be an episode embedded in another. This occurs if one episode is initiated before the preceding is completed. The following examples show the two different types of multiple causal chains (Lahey, 1988, p. 272):

A. Conjoined Causal Chain

A few years ago Henry tick lived in a hippies hair, but he got a crew cut so Henry had to move. He went to the pet shop but it was closed too. Finally he found a nice basset hound. So he moved in...He got a good job at the circus jumping two inches in mid-air into a glass of water. One day he jumped but there was no water. He was rushed to the hospital. They put twelve stitches in his leg. Well, he never went there again...

B. Embedded Causal Chain

A man named Mr. dirt lived in the country all by himself and owned a farm. One calf got away and went into the woods and headed for the mountains. So Mr. Dirt went up the mountain after the calf. On the way a bear came after Mr. Dirt. He ran up a tree and the bear came after him. Mr. Dirt threw his ax at the bear and hit the bear in the head. Blood poured out of his head and the bear fell down and died. A few minutes later the calf ran over to Mr. Dirt and they went back to the farm.

These types of narratives are a part of everyday communication and therefore it is essential for children to use and understand these components to develop good communication skills. Given this, textbooks should be written to facilitate comprehension by following a story grammar format. One would expect early reading textbooks to have

simpler structure since the task of reading is difficult. That is, one would expect the books to be fairly explicit in how story grammar is followed.

The complexity of stories also can be determined by considering the sequence in which oral narratives are produced. In normal narrative development, there are several narrative structural levels (Lahey, 1988). At the age of three it is expected that a child has developed additive chains. Here a child strings together sentences in no necessary order, but on a specific topic. Next, a child develops a temporal chain where each sentence in a narrative is related chronologically. By the age of five, it is expected that a child will use simple causal chains and between the ages of seven to nine will advance to multiple causal chains. Here conjoined and then embedded episodes are mastered.

It is not yet known if reading textbooks are indeed written using story grammar structure or reflect appropriate narrative developmental levels. The complexity level, number of episodes, and content questions for stories in reading textbooks must be studied to determine whether reading textbooks have adequately incorporated what is known about narratives.

A pilot study (Brickell, 1996) examined 6 stories from the Houghton Mifflin (1993) second grade reading textbook series. These stories were analyzed in terms of complexity and number of episodes. It was found, on the average, the stories contained 3.67 episodes, and five of the six stories contained embedded multiple causal chains.

Another analysis within Brickell's study was conducted on the end-of-story content questions. Each question was determined to be either a literal factual question about the content of the story or an inferential question, which asked for more independent thinking on the part of the reader. It was found that 78% of the questions were considered factual

and 22% inferential. Overall, Brickell's study suggested that while most questions were straightforward, the structures of the stories were more complex than might be considered appropriate.

Thus, this study sought to extend the data obtained by Brickell. Specifically, the stories within second grade textbooks were examined for narrative complexity level, number of episodes, and content questions.

METHOD:

The stories in the Levels 5 and 6 of the reading series by Scott, Foresman and Company (1989a, 1989b), were reviewed in this study. This series was chosen because it represented one of the current choices of reading textbooks used in the second grade classrooms in schools in the Northwest, based on personal communications with local instructors.

Analysis of each story consisted of counting the number of episodes and determining the story's level of complexity. Each episode was determined according to the story grammar components of Stein and Glenn (1982). An episode was considered complete if it contained the story grammar components of setting, initiating event, attempt, and consequence. Next, we determined each story's level of complexity according to Botvin and Sutton-Smith (1977). Multiple causal chains were analyzed to determine whether the episodes were conjoined or embedded. Each story was given credit for the highest level of complexity found within the story. For example, if an embedded multiple causal chain occurred at any time within a story then the story was counted as embedded.

In addition to reporting the episode count and complexity of the stories, the questions at the end of the stories were analyzed. Each question was assigned to one of the three following categories: factual, inferential, and reflectional. A question was considered factual if it required an answer that was taken directly from the story. An inferential question required the reader to infer or use previous knowledge to answer the question. A reflectional question was one that required the reader to give his/her thoughts on a subject. Each question was analyzed and assigned a category.

In all, 34 stories were analyzed for structure and level. From these stories, 121 questions were analyzed as well. A second judge, Mary Ann vanBruggen, a student of Western Washington University's Speech Pathology graduate program, served as a reliability check for these analyses. We analyzed the same stories and compared our findings to ensure the correctness of our data. Differences in analysis were worked out through discussion.

RESULTS:

The numbers of episodes for each story in Under the Moon, Scott, Foresman Reading: Level 5 (1989), are found in Figure 1, while the episode counts for What Do I See? Scott, Foresman Reading: Level 6 (1989), are found in Figure 2. The dark gray bars indicate the number of episodes in a multiple causal chain, the black bars indicate the number of episodes in a story where an embedded multiple causal was found, and the light gray bars indicate where only a single episode or simple causal chain occurred in a story. It was found, on the average, that these stories contained 3.74 episodes. There were 7 stories with embedded episodes versus 23 stories with conjoined episodes and 5 stories

with simple causal chains. Furthermore, Figures 1 and 2 show the stories in the order found in the textbook. These results show no gradual advancement of complexity as the book progresses. Rather, the complexity and numbers of episodes varied randomly from story to story.

Figure 1

**Under the Moon. Scott, Foresman Reading: Level 5 (1989).
of Episodes per Story in Textbook Order**

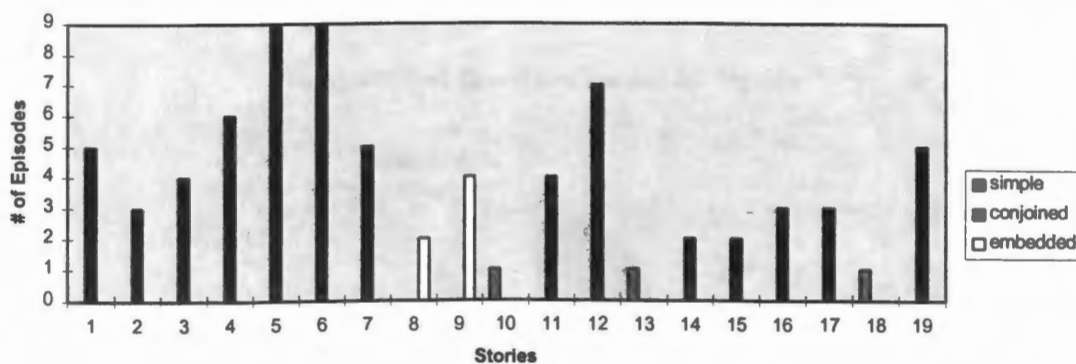
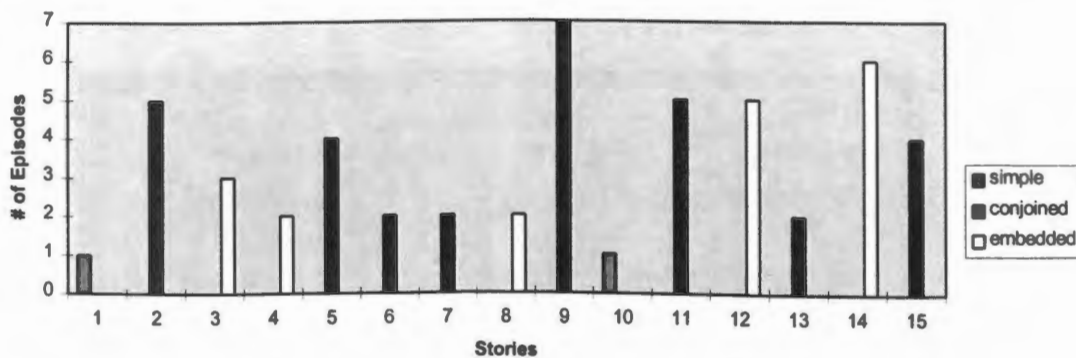


Figure 2

**What Do I See? Sott, Foresman Reading: Level 6 (1989).
of Episodes per Story in Textbook Order**



The content question analysis is displayed in Figure 3. It was determined that 64% of the 122 story content questions counted were factual, 20% inferential, 16% reflectional. Figure 4 displays the question categories according to each story in textbook order. The questions reflect a general pattern of including all three question types for each story, and progresses from being all factual to more inferential in the terminating story.

Figure 3

Total Content Questions Across All Stories

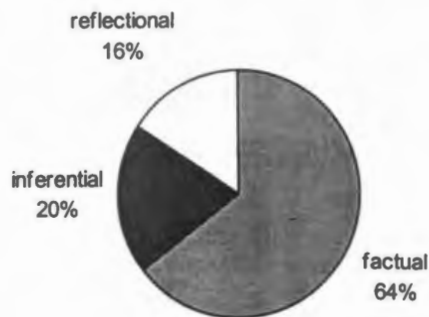
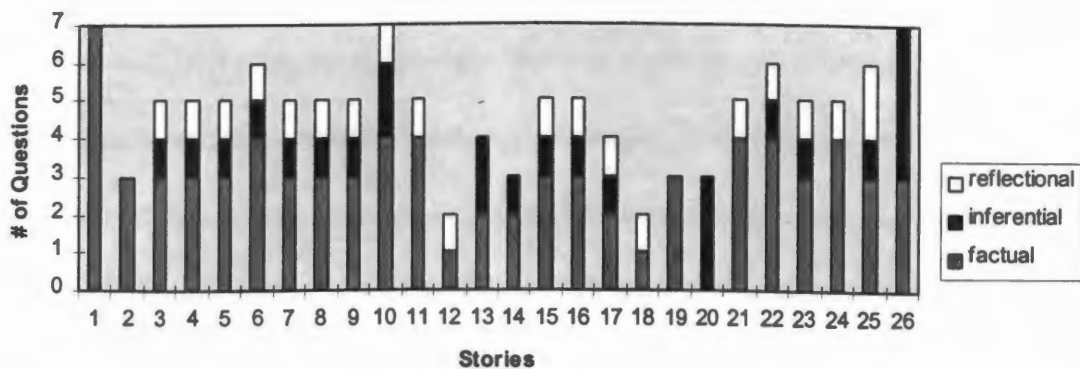


Figure 4

Question Category Count for Each Story



DISCUSSION:

The episode count results of this study were consistent with the pilot study (Brickell, 1996). Our average episode factor of 3.74 was consistent with Brickell's 3.67. This indicates that the data obtained from episode counts made in the second grade textbooks by the publishers of Scott, Foresman (1989) and Houghton Mifflin (1993) are consistent and therefore reflect what is being widely read in the schools.

A data discrepancy between the two studies was found in the case of the embedded versus conjoined ratios. While Brickell's results revealed a 5 embedded versus 1 conjoined ratio, our results showed a ratio of 7 embedded to 23 conjoined. This disparity may be explained by the fact that in Brickell's study, we do not know the order in which the stories were chosen. For example, the stories may have been chosen all at the end of the series which may have more complex or embedded stories than the beginning, which may have skewed the results. Yet this discrepancy between the two studies may indicate that different publishers have a more difficult story focus than others.

At times it was difficult to clearly label the story grammar components in some stories. Elements such as inferred data, temporal sequences, and intricate setting descriptions all made it difficult to determine story grammar components. Given that trained speech pathology students were experiencing difficulties deciphering components, it was thought that the stories might be difficult for some second graders. A story where the components are not easily deciphered does not seem to be a good model for a child to learn to read for content. With simpler structures, presumably, an increase in comprehension would occur since more mental resources would be available. When a

child begins to read, all of his or her working memory is taxed on decoding words. As a result, it may be harder for this child to comprehend a complex narrative such as an embedded multiple causal chain. Yet embedded multiple causal chains are found by the eighth story in the reading series investigated, which may be too complex for beginning readers.

The results showing the lack of a gradual progression in episodic complexity also seem counterintuitive since this does not reflect normal narrative development. The randomness of the number and complexity level of the episodes from one story to the next did not reflect the gradual narrative acquisition model. This lack of a progression may make it harder to learn as this does not reflect the way in which the child naturally develops narrative skills.

The episode count and complexity may be random between stories, but the content question analysis showed consistency between stories and was concordant with the results found in the pilot study. Brickell found that 78% of the questions were factual while 22% were inferential. Our study's results were similar with 64% of the questions categorized as factual, 20% inferential, and 16% reflectional. The slight differences in results may be accounted for in the reflectional category which we added. Some of the questions in Brickell's study labeled as inferential may have been labeled as reflectional according to our definition. In any case, these results demonstrate that some independent thinking is targeted through the inferential and reflectional questions.

The fact that the majority of end-of-story questions are factual may indicate that not enough independent inferential thinking is being elicited. The implications of this may be that students are not being taught the skill of inferencing. According to Milosky

and Ford (1996), inferencing is “the processes by which the individual elaborates on information presented in order to further develop a mental framework or mode that is taking place.” That is, an individual uses knowledge about past experiences and information known to find meaning in a situation or story. Story questions may help to develop this skill by asking for information that requires the reader to apply knowledge that can’t be found in the story. For example, the question, “What does the character do in the story that can’t really happen?”, asks the reader to apply his or her knowledge about real life to the story. Yet, instead of this type of question, the majority of questions in the textbooks were factual. This type of question may only teach the reader to simply look at the words of the story and not to infer any meaning.

This lack of inferential exercises is surprising as our study found that most of the stories require the reader to infer meaning. When the episode count was calculated, it was found that in many instances an episode could not be counted because a story grammar component was missing. In many of these cases the missing component was implied. The following is an example of this type of inference.

“Then he (Puss) hid in the high grass and made the sound of a partridge. Two partridges heard the call and ran into the sack. Puss hurried to the King’s castle. ‘Good day, your Majesty,’ said Puss, ‘Here is another gift from the Marquis of Carabas.’ ”
(Puss in Boots, Scott, Foresman: Level 6, 1989, p.247)

The initiating event of Puss wanting to make the master Marquis of Carabas happy is stated earlier in the story. The attempt is stated as Puss is hiding the grass making partridge calls. Yet the consequence of actually pulling the cord of the sack and catching the partridges is not stated. Instead one must infer that the “gift” is indeed the partridge, and therefore must have been caught after the partridges ran into the sack. Furthermore,

the reader must infer that these attempts and consequences will ultimately please the Marquis of Carabas. These inferences may be natural for a student who has practice getting the meaning from stories by looking beyond what is written. Yet for the student who is not getting this instruction, or one who needs more instruction to understand a concept, these inferences may not be made. As a result, this student may not have very good reading comprehension.

Although there are many implications found in this study on the content of second grade reading textbooks, there are several limitations. First, in combination with Brickell's study, only two second grade level publishers were examined. This is not enough information to make any generalizations regarding textbooks. Furthermore, the supplemental reading exercise materials the teacher uses also should be examined. If the teacher isn't solely relying on the textbook for story grammar exposure and inferential thinking, then the textbooks may be adequate. Additionally, other learning advantages or disadvantages these stories may have in the education of students have not been studied. These stories may not rate as good in the field of narratives, but may be excellent educational tools for other areas, such as moral education and creativity to name a few.

Additional studies must be conducted to gain a better understanding on the content of reading textbooks. Educators and parents should be made aware that reading textbooks may not be the best tools for narrative development. Instead, the textbooks may be a source of frustration for the student. This frustration may be reduced and learning increased through the use of supplemental teaching. Research on these other tools also should be conducted to ensure complete narrative instruction in the classroom.

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