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**Reading and writing in a specific environment: The Malaysian
experience**

Mustapha, Sali Zaliha, Ph.D.

Indiana University, 1991

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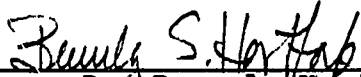
**READING AND WRITING IN A SPECIFIC ENVIRONMENT:
THE MALAYSIAN EXPERIENCE**

by

Sali Zaliha Mustapha

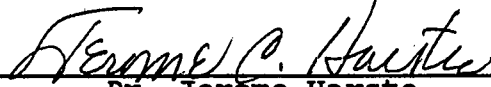
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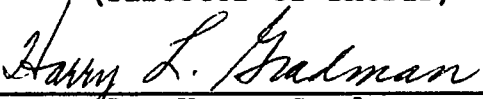


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**This book is dedicated to
my parents,
my brothers and sisters**

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ABSTRACT

READING AND WRITING IN A SPECIFIC ENVIRONMENT: THE MALAYSIAN EXPERIENCE

With the emphasis now on the use of the national language, schools and other institutions of higher learning in Malaysia are conducting almost all courses in Bahasa Malaysia. However, English is still the main language used for other special purposes, e.g., trade and industry, tourism, communication, and most important of all in academic settings where it is needed for reference purposes. Students, especially at the tertiary level, therefore, have to read extensively in English for these purposes.

At this academic level, Malaysian students have to read not only complex academic texts but write and learn in English as well. Also, there is a need to understand how their learning environment and the learning emphases impressed upon them have influenced their reading and learning strategies. The lack of understanding of how students use reading in learning, however, is particularly problematic in Malaysia.

This study, therefore, is a preliminary effort to understand how ESL learners in a Malaysian college setting read in order to learn, that is, how they engage in the process of taking in, storing, and retrieving information

from academic texts for purposes of classroom verbal participation and for written assignments.

Participants are ten female college students selected from the three main ethnic groups in Malaysia--Malay, Chinese, and Indian. Participants read an expository text and demonstrate comprehension through Think-Alouds, Retellings, and Freewrites. Protocols from the Think-Aloud and Retelling data sets are transcribed verbatim. Categories derived from the three data sets are then compared to derive the kinds of cognitive and metacognitive strategies that proficient Malaysian adult readers use in order to carry out the tasks required of them. Strategies used for the different tasks are also compared. Implications for learning theories in cognitive science and general system technology--specifically cybernetics--are made, and their applications to ESL teaching and learning suggested.

CHAPTER I

Introduction

1.0.0. Brief Background and Nature of the Study and the Participants Involved

With increased emphasis on the use of the national language, schools and institutions of higher learning in many countries whose official language has been English, are now conducting almost all courses in their respective national languages. Malaysia, the focus of this study, is no different. However, as in many developing nations, English remains the language used for other special purposes; e.g. trade and industry, tourism, communication, and most important of all, for reference purposes in academic settings. Especially at the tertiary level in non-English speaking countries, students have to read extensively in English for these reference purposes. Reading, as may be expected, is not the only English-based activity these students engage in. In fact they often take notes, produce translations, and write reports based on their reading.

In accordance with this need, many universities and colleges in Malaysia have created a plethora of English reading and writing courses and programs. In fact, nearly

all colleges and universities provide some kind of reading and writing instruction for their students. However, most of these programs use methods and materials that are quite similar to those used in secondary schools, although attempts have been made to adapt these methods and materials for the benefit of adults. These attempts, however, have been inadequate because they are not based on research concerning how ESL adults read and write in an academic setting. In fact, the list of dissertation abstracts compiled in Malaysia (Ministry Reports 1985, 1988), includes no study looking at the strategies used by Malaysian ESL adults, or children, learning to become more proficient readers or writers.

This study is a preliminary effort to understand how foreign-language learners cope with reading in a language which is not their own. It is borne specifically out of the need to better understand how English-as-a-Second-Language (ESL) students in a Malaysian college setting read in order to learn. That is, how they understand and use the new information that they read to extend their learning process. To a larger extent, this work is an effort to understand how students engage in the process of taking in, storing, and retrieving information from academic texts for purposes of classroom verbal participation and written assignments.

Much of the research which has influenced foreign-language learning over the past twenty years has been in

the fields of applied linguistics and second-language acquisition. Although this research has led to a heightened awareness both of the nature of language as a human phenomenon and of the way in which it is acquired, there is no evidence to suggest that new instructional materials and methodologies have had any significant influence on how ESL students learn a new language or how they use this language for learning purposes. New methods of teaching alone do not necessarily improve all forms of learning in all students. There is also a need to understand the learners themselves.

The lack of understanding of how ESL students use reading in learning is particularly problematic in Malaysia. Students have to read complex academic texts and in the process have to write and learn in English. At the same time there is also a need to understand how the academic environment has influenced their learning strategies because of the principles of learning impressed upon them through their entire school career. This study, therefore, is an attempt to understand how adults readers read by examining the reading strategies of ten female college students in a Malaysian university setting.

The choice of only female participants is quite well-founded. Although Malaysia has three distinct ethnic groups-- Malay, Chinese, and Indian--each with its own religious and cultural leaning, it is a Muslim country and, as such, certain social heritage must be observed.

Due to the nature of the research procedure (which entails considerable individual interaction time with participants alone in a recording room) the researcher found it more conducive to be with with a female than than with a male. This was especially true since much data collection was also done in the evening and at night depending on the time availability of each participant. At the same time, it was also felt that the participants would also feel more at ease being with another female and data elicitation would be richer in return.

Participants selected for this study were from the three ethnic groups and they were students of either junior or senior class standing at the university. They were doing a Bachelor's Degree in the Teaching of English as a Second Language (TESL). They were also former teachers who have taught ESL for an average of ten years in both Primary and Secondary schools throughout West Malaysia. Their ages ranged between 34 and 42.

Participants were referred to the researcher by the university faculty members who were teaching them. The final selection of these participants, however, was made on the basis of their academic and professional background, the flexibility in their class-time schedule, and the fluency of their spoken English. Each participant was paid the amount of M\$25.00 for their participation in this study.

1.0.1. Data Collecting Procedure

The complexity of reading processes and related academic activities call for different methods of eliciting learning strategies. In many reading studies conducted so far, researchers have tended to concentrate on only one particular aspect of the text in order to understand readers' use of their reading strategies. These studies have used a single means of understanding readers' interaction with text, such as text-structure analyses, concurrent think-aloud protocol analyses, retellings, miscue analyses, or freewrites.

However, the assumption here is that to select only one methodology as a means of understanding a rather complex system limits our understanding of it. This study, therefore, is an attempt to use different data formats and analyses to look at not only how information from texts is processed and recoded for encoding, but also how this same information is later retrieved for different purposes. It is an attempt to describe how ESL students in Malaysia read in order to gain new information and how this information is utilized in other academic tasks for the purpose of learning.

In order to do this, Think-Aloud protocol analysis is used to trace the cognitive and metacognitive processes inherently used by readers in reading and comprehending texts. This will be followed by a Retelling task to elicit readers' storage of information gathered from that read-

ing. From their Retelling protocol, strategies used to retrieve information from long-term memory (LTM) may be inferred. Finally, a Freewrite task will be used to understand how information gathered from the reading is then used for another purpose.

The examination of the Think-Aloud, Retelling, and Freewrite data analyses may then provide an insight into strategies that ESL students use to extract meaning from written texts. At the same time, the examination will indicate how that "meaning" is then mobilized in other areas of learning activity and what strategies are used for this mobilization. This information can then be compared with research-based models of efficient reading and used as a basis for designing effective reading and writing programs for both adult and young learners in a non-native English speaking environment.

1.0.2. Overview of the Chapters in the Study

Following this introductory chapter, Chapter II will give a brief history of text comprehension research. It will trace how text comprehension has been approached previously and why there is a need for a more integrated method of study in order to understand reading and other related activities within the context of a learning situation.

Chapter III will be divided into three major parts. Part One will describe a concurrent Think-Aloud protocol

analysis procedure. This procedure is used to capture participants' ongoing verbalizations of the different "problem-solving" strategies they bring into play in order to understand text. The strengths and usefulness of the Think-Aloud protocol analysis procedure are discussed and its implications for the working memory elaborated.

Part Two describes the Retelling data gathering procedure. This procedure is employed to capture encoding strategies that readers may use in order to remember information that they have read. It is also used to see which aspects of a text will be readily encoded and stored into long-term memory and what other influences will play a part in that encoding and storage.

Part Three describes Freewrite, the last procedure used in this study. This writing procedure is used to elicit the kind of information that readers select from the text read and which they will include in their written task. This Freewrite activity will ultimately indicate which part of the text has had a real impact on the readers because the writing activity will necessarily call on them to have a more personal engagement with the text content. It is an interpretation of the text for the readers' own purposes; an interpretation that will indicate the learning that has occurred through the process of reading.

The Conclusion in Chapter III reiterates the necessity for the integrated use of the different methods of data elicitation already mentioned.

Chapter IV describes how the participants in this study were selected. It will also describe how each data set was collected, when and where it was collected. Research questions will also be included at the end of the chapter.

In Chapter V, analysis of the concurrent verbal protocols together with categories derived from this analysis will be tabulated. The salient meaning-making strategies used by participants will be looked at in detail and the variations in the reading strategies of the participants will be elaborated upon.

Chapter VI and VII will analyze the Retelling protocols and written products of the participants' Freewrite activities. Categories derived from the analyses of these two sets of data will be tabulated and emergent patterns discussed.

The Conclusion, Chapter VIII, will then outline and evaluate the findings of the study. Implications of the findings to theories in cognitive science and general systems technology--specifically, cybernetics--will be explored. Their generalizability and practical application to teaching and learning will be looked at. Finally, suggestions for the use of different methodologies to study particular aspects of similar problems will be made.

CHAPTER II

2.0.0. A Brief History of Text Comprehension Research

For many years, the comprehension of texts has been approached in different ways depending on the theoretical orientation of the researchers concerned. Initially, interest began with mere deciphering of words in the texts themselves. Starting with Vico (1725), texts were seen as replete with "signs" and "symbols" which only needed to be decoded by the reader in order to extract the information contained within them. This trend persisted into the 1900s and is characterized by the belief that the most supportive way to help students understand text content is to help them understand text structure.

Armed with this analytical tool, structuralists like Roland Barthes (1966), A.J. Greimas (1966), Tzvetan Todorov (1969), and many others, postulate a formal homology between texts and sentences and then subject their corpus of study to descriptive methods common to structural linguistics. The assumption is that linguistic methods can be used to explicate all forms of text systematically (Culler, 1975). In line with this view, texts merely serve to reintegrate form and content. They are seen as an intrinsic, self-generating, self-regulating and ultimately self-regarding whole. Reading, therefore, needs no

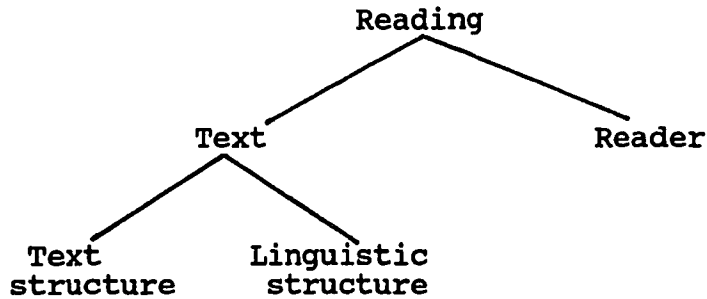
reference beyond its own boundries to validate its nature. Thus, from the point of view of the structuralists, text is autonomous.

However, the structuralists' view of looking at signs and symbols and how they are decoded have come under strong criticisms from researchers in other fields. These critics claim that one has also to be aware of the fact that there are other elements that play a role in the interpretation of these signs and symbols. The gift of "sapienza poetica," as alluded to by Vico (1725), may be universal but since signs and symbols themselves are arbitrary--depending on the language and culture the readers come from--their meaning cannot always be specifically inherent in them. The individual reader, therefore, has to always actively participate in this universe of signs and symbols in order to understand the significance of each one of them and the context in which they appear.

The persistence in the study of text-structure by many linguists and cognitive psychologists continued, nonetheless, and this could be attributed to another important factor. Ever since the publication of Noam Chomsky's Syntactic Structure (1957), the influence of generative thought on syntactic studies has been deeply felt throughout the world. There has been a movement towards "text grammars" - i.e. programmatic theories of text generation following a Chomskyan-like notion of text competence. The objective has been to provide a viable

alternative to earlier structuralist models. Chomsky's generative-transformational grammar theory, however, does not account for the infinite number of paraphrastic substitutions or summaries (which are far from being invariant) that the readers can make when reading a text, though it manages to account for a part of them. One obvious reason for this is generative grammar's restriction of syntax to the sentence. The restriction, however, is not unreasonable if we make the assumption that syntax is autonomous; i.e. it studies those aspects of language organization that are independent of communicative intent, and a sentence is the expression of a complete (coherent) thought. However, as most researchers in reading and in communication have pointed out, between a text and its paraphrase, between one paragraph and another, invariance is not linguistic in nature but semiotic.

Consequently, in reading, nowhere in the Chomskyan-like model of text-grammar is there a notion of the reader himself since the text-grammarians' primary focus is on the syntactic aspects of texts. Signs, and how they are ordered in the text, are scrutinized in great length, and hypotheses about the product of reading are based solely on the presentation of these signs. Thus, under the structuralists' and the text-analysts' influence, the emphasis on reading research can be schematically described as follows:



(The emphasis, therefore, is on the left-hand node of "Reading").

Figure 1: Emphasis on Reading Studies

One would think, then, that a more reader-oriented research should be in cognizance next, and most students interested in human cognition would think that the best place to look to now is cognitive psychology. However, research in cognitive psychology itself has also been rather componentialized. Since Emile Javal (1878) first studied the saccadic movements of the reading eye, studies in reading and text comprehension have concentrated on the view that reading is really made up of a number of "bottom-up" processes, i.e. the smaller components of words, phrases, and sentences that make up texts have become the object of study. That being the case, experiments in phoneme and word recognition, and syntactic processing became prominent in reading research.

At the same time, educators who are involved in a real classroom situation are becoming discontented with what is happening in the experimental laboratories. Read-

ing, they stress, cannot be understood by reference to what the cognitive psychologists would call "phoneme onset time" or to the "logogen" and "cohort" theory. Nor can comprehension be improved by mere knowledge of the various components of the text or of the reading process itself. Perhaps it was the seminal work of Jack Holmes in his "Substrata Factor Theory" (1953) that galvanized into action other reading researchers interested in the readers and what they do while they are reading.

The Substrata Factor Theory states that underlying each of reading's two components, speed and power, are a host of skills and processes; the reader organizes them into momentary working systems according to his or her purposes and the demands of the reading task. This view emphasizes numerous systems and subsystems necessary for "comprehensible" reading to occur. It looks at reading as an interaction of different knowledge structures that the reader brings to the reading task. Following this theory, researchers such as Rumelhart (1976), and Adams and Collins (1977) began to look earnestly into the interactive concept of reading and its implications for instruction in schools and colleges.

Also in the 1970s, another major force emerged that emphasized the importance of research on text. This force is the new field of artificial intelligence (AI). Although AI had started in the 1950s (Feigenbaum and Feldman, 1963), it was not until the 1970s that language

understanding became a major topic in the field. However, AI not only provided more impetus for the study of text understanding, but also indicated that the study of text structure alone was not sufficient for a complete explanation of text understanding. Merely knowing text structure is not sufficient for the design of a computer program that will understand text. Other aspects are also necessary: the knowledge necessary to make the inferences that are needed to link the information in the text into a coherent mental representation of the text and the processes used in understanding the text and retrieving the information from memory later.

Thus, with the advent of computers, research in AI has progressively been pushing for a better understanding of the working mental processes rather than merely the product of those processes. This process-product dichotomy has had its first impact through studies in "pragmatics" which has been greatly influenced by "speech act theory"; the focus being that "many properties of sentences and discourse *a fortiori* of verbal communication in general cannot be accounted for in terms of grammatical theories ...[but rather through a] pragmatic component in which rules, conditions and constraints can be formulated based on systematic properties of (speech) acts and communicative contexts" (van Dijk, ed. 1976: vii). Thus context, reading purposes, general knowledge, and other causes that could impinge on the reading process are added to the pro-

gressively complex network of reading theories. Reading is no longer viewed as either top-down or bottom-up, but as a parallel processing of both top and down, plus other cognitive activities and competing causes acting on the reading process, all of which could either help and/or retard comprehension.

It has taken reserchers a long time to look at texts from this new perspective--that texts are not mere retainers for syntactic manipulation, but that they can also be tools for learning and critical assesment. For years researchers in linguistics and cognitive psychology have never really been able to relinquish their hold of text, the concrete object, and to look at the readers and what goes on in their mind as they read it. The quest for understanding the hidden realms of the human mind has only just begun.

However, in addition to what is happening in the reading research domain per se, it should also be stressed that studies in other domains, natural and physical sciences, cybernetics, mathematics, economics, etc., though not directly related to reading, have also had a great influence in redirecting the focus in reading research.

In a very interesting article on general systems technology (GST), Boulding (1968: 3) talks of a "...body of systematic theoretical constructs which will discuss the general relationships of the empirical world." In

advocating GST, however, he stresses that we should not replace all the other theories of particular disciplines because each discipline still has its own special contribution to our understanding of the empirical world. He stresses, however, that what GST should endeavour is not only to point out similarities in the theoretical constructions of different disciplines, but more importantly, to develop a system of systems which can function as a "gestalt" in theoretical constructions.

By looking at Figure 2, the gaps in the table for reading, are quite obvious. A lot of research has been directed towards the content of the text, but very little has been done on the reader and the processes that connect him/her to the text. These are the slots that need to be filled because; although the interaction of elements within the text itself is important, the interaction of different "elements" within the readers themselves is also equally important and needs to be studied if gestalt in reading is to be reached.

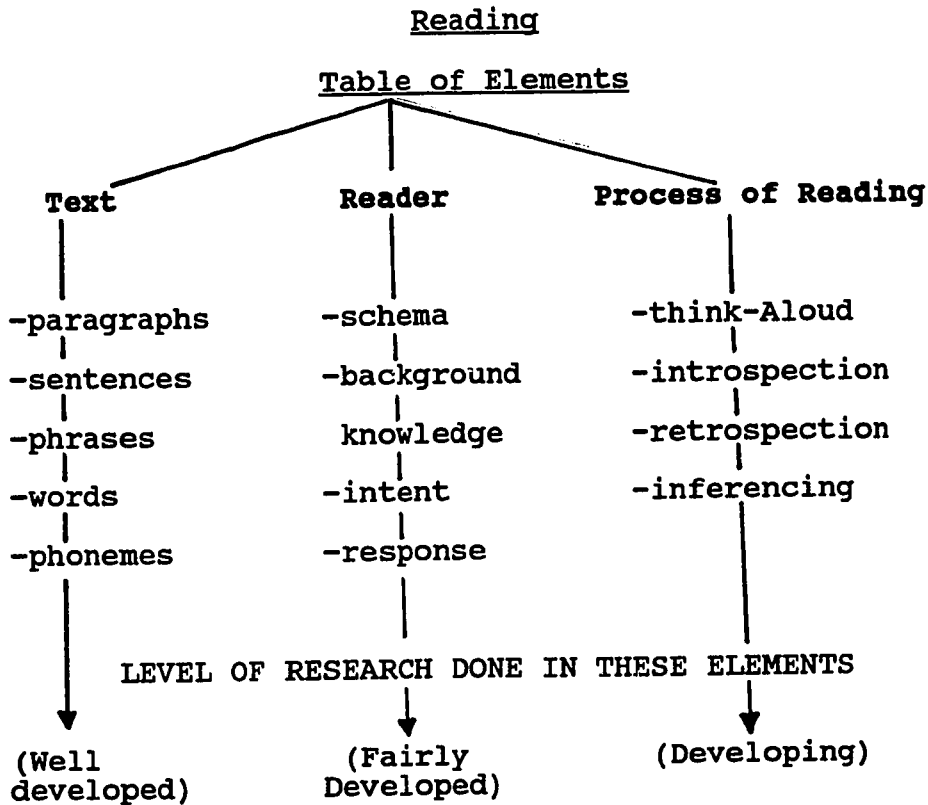


Figure 2: Table of Elements in Reading

Earlier in this chapter, I mentioned that it is partly due to computer technology that interest in the cognitive aspects of the reader has been resuscitated. However, it should be stressed that unlike computer programming (or any system that it wishes to simulate), which begins from discrete "low" level components, the human brain works with the simultaneous activation of thousands of neurons. This is a feat which no computer has yet been able to even come close to. At the same time, this fact has not deterred computer-related neuro-

psycholinguists from trying to simulate the human processing system, as can be seen in the work on TRACE (1987).

TRACE came about as an effort to construct a system which can bear a close resemblance to the working of the human mind in the perception of speech. It is called TRACE because its interactive activation framework is made up of units which form a processing device which is assumed to traverse or trace through the system "nodes" before confirming or disconfirming its comprehension of the given words. What is interesting about the units traversing across the nodes is that the process is very similar to Winston's "similarity network" (in Minsky's "A framework for representing knowledge," 1977) or Collin and Quillian's memory structure (in D.V. Howard, 1983) in that arrival at different nodes either "exites" or "inhibits" further search through the system network. Thus, TRACE is assumed to be using an "on line" recognition of words, a method of word recognition which is similar to the one used by the human processing system.

Through the work in TRACE, other computer-related systems, code-named HARPY, HEARSAY, HWIM, and SDC were built; all designed to address the question of how best to define communication links between system components, how to arrange activities among these components, and how to combine different information from different knowledge sources through "branching" links. However, we should again remember that none of these computer systems were

really able to imitate the human processing mechanisms. HARPY, which turned out to be the best system of them all, only succeeded in acting as a system of intelligence which was able to verify the knowledge that was already in it.

In order to understand the forms of "knowledge" which are supposed to reside in a system and to determine its working capability, a method of "knowledge verification" is, therefore, required. This is necessary and it is for this very reason that engineers conduct tests on various makes of engines, nuclear scientists on some newly created nuclear-powered modules, technologists on their various machine inventions, behavior psychologists on their numerous laboratory animals, singers on their voice, and on the home front, teachers on their students. Some of these systems are easier to test than others, but nothing is more complex or more difficult to test than the human mental processing system. In fact, if we were to talk in terms of filling up the various tables of elements in the different domains, as suggested by Boulding, it would not be wrong to assume that the most difficult to fill would be the table of elements of the human information processing system. But as in all other research, it might be more profitable to try to look at the human processing system from an angle different from those where reading was usually looked at--not at the text structure per se but at the human cognitive system that interacts with that text from different angles.

2.0.1. What Reading Means to Some People

The importance of written text in the psychological evolution of the human race is difficult to exaggerate. Texts act as extensions of spoken language across historical time and they have allowed the binding together of mental events happening at widely separated places and times. They have also allowed ideas to be transmitted across generations, across cultures, and allowed each generation to learn from its predecessors. For most teachers, nothing is more important than to see that this ability to read and to learn is furthered within each individual student. What happens when a reader scans a printed page becomes an issue of not only whether he or she can read the words, but also whether he or she comprehends and learns something from them. As many students would vouch, reading and writing are something which permeate their school life: they have to read to know and they have to write to show what they know. What they "know" after each reading will be verified by what they understand, and how much is retained in their memory will only be enhanced by the degree of understanding reached from that reading.

In today's world, the rate of information growth has increased exponentially, and this information load and the stress on the individual and society that it produces is one reason why the study of text has expanded so rapidly over the past years. If most human knowledge is embodied

in text, and if most information transfer is through the medium of text, then the information overload is primarily an overload of text. It is, therefore, necessary that the medium in which the overload is embodied be given more study.

2.0.2. Is There Another Way of Studying Texts?

If the success of computer language programming depends on the understanding of relationships between the knowledge components within and those fed to it, then, at the very basic level, we should also have to try to understand how components from any text--fed to, say to the human computer--interact with the knowledge components that are already within the reader. Unlike "language computers" whose language components we know and can control (since we are responsible for feeding them into their circuits), the human knowledge structures are complex and contain information which only the individual has knowledge and control of. It is a system to which we have no direct access, and which we cannot open for direct scrutiny. But like HARPY, we may be able to verify certain links between the text and the reader based on the mental processes that we, metaphorically speaking, are permitted to "see."

Having the will necessitates us to find a way, and in this respect we are quite lucky. Recently, with the renewed interest in process, as opposed to product, a com-

paratively old method of studying human mental processes has been reawakened from its long slumber. This method is called introspection. It was first used as a systematic means of self-observation by structural psychologists in the late nineteenth century. As the name suggests, introspection calls for the subject to observe directly the processes of his or her own mind and to report this observation verbally at the same time. Hopefully, this concurrent verbal report which can be captured on tapes, will enable us to "see," perhaps, a glimpse of the inner workings of the human mind. While it is also true that a lot of what we process is done unconsciously, the nature of the subject or object that we interact with will, to a certain extent, also determine the amount of processing that we will remember and be able to report (Ericsson & Simon, 1980, 1984; White, 1980).

However, that is not the end of the subject. The next question to be asked then, at least for me, is how can I vary the reading knowledge that is now supposed to be in the reader? The usual method which generally takes the format of a multiple-choice reading comprehension test has been criticized for measuring either more-or-less than what comprehension may involve. It is also hypothesized to measure behavior which only indirectly reflects the comprehension process itself. Another form of comprehension monitoring, the cloze procedure, on the other hand, has been criticized for testing neither the reader's short-

term memory capacity nor his/her skill in understanding questions. It (supposedly) depends, largely, on the reader's knowledge of structure range with respect to the ease or difficulty encountered in blank filling (cf. Cavalcanti, 1987). Thus I turn to what I would call a retrospective mode of comprehension monitoring; a process which has now been popularly called "Recall" (Harste, 1989). Through this method of "recall," I hope to be able to tap into (a) the immediate product and (b) the delayed product of that reading process. The immediate product will be subsumed under "Retelling," and the delayed, under "Freewrite."

In the next chapter, the three different methodologies to be used in this study, concurrent Think-Aloud verbalization, Retelling, and Freewrite, will be discussed. The concurrent Think-Aloud verbalization and protocol analysis is a method which has only recently gained prominence not only in English-as-a-Native-Language but also in English-as-a-Second-Language reading study. Retelling, on the other hand, has been quite widely used but not quite the way it will be utilized here. And Freewrite, which is also gaining prominence in many writing studies, will be used not only to see what aspects of the text read will be chosen to be the content of the new text but also to substantiate what the findings in the Retelling and Think-Aloud might divulge.

CHAPTER III

3.0.0. Introduction

This chapter is divided into three major parts. The first part will deal with aspects of concurrent Think-Aloud data collecting techniques that have been used and the criticisms levelled against it. It will also explain why, despite the criticisms, it is still being used (and used in greater intensity) by researchers interested in the process approach to learning. Since a lot of what is going to happen in Think-Alouds, Retellings, and Freewrites will also involve memory, a model of it will be described. In this respect, Baddeley's (1982) Working Memory System--as described in Salame and Baddeley (1982) will be used.

The second part will consider techniques of information retrieval used in reading and how they are related to the Retelling data collecting procedure that will also be used as a part of this study. This section will briefly outline research that tries to tap into the human information gathering and storage system and will explain why knowledge of that system is important to this research. The last part of this chapter will look into some of the methodological perspectives given on writing as a basis for the Freewrite data-collecting and data analysis in this study.

PART ONE

Design of the Study (Procedures and Instruments Used)

3.0.1. Think-Aloud Protocol Analysis

Reading is probably one of the most difficult processes to study because it is essentially a silent, private activity. Thus, in order to understand readers' strategy use when they interact with any form of written materials, a method called concurrent think-aloud protocol analysis will be used in the first part of this study. Since participants must be aware of what they are thinking in order to verbalize it, protocol analysis can reflect only conscious processes; some functions that may be occurring subconsciously will not surface in the data. Nevertheless, because a large body of research has shown that effective readers do have a conscious awareness of their cognitive processes, protocol analysis methods are of value in uncovering the effectiveness of readers' control of their comprehension.

One of the strengths of the analysis of an ongoing task is that the mental processing in short-term memory (STM), which is almost totally lost in retrospection, can be described and reported (Ericsson & Simon, 1980). Other advantages of this data-collection technique are in

providing information about the individuals' approaches to the task, their levels of decision making, and the factors which govern their decisions (Faerch & Kasper, 1987). It also helps to capture the "flow" of reading, changes of mind, etc., and more importantly, think-aloud protocols can form a useful aid for later discussions of the text as they help the recall of thoughts occurring during the reading process.

However, one limitation with this technique is that individuals may report only a limited range of strategies of which they are consciously aware of at the moment for any particular task. A second is that the process of interrupting informants to report on their thoughts may change the nature of the thinking and precipitate strategic processing which otherwise might not occur. A third concern is whether or not the strategic processes involved in learning can be identified or if these verbalizations simply reflect strategies underlying language use (Selinger, 1983). That is, are strategies for learning sometimes unconscious, and if they are unconscious, are they accessible? The view I prefer on this issue is expressed by Dechert (1987), who noted that a cognitive theory based on memory organization, schemata, and spreading activation avoids an imposed dichotomy on conscious and unconscious mental processing and "...enables us to better understand the processing of language...as revealed through concurrent think-aloud data" (p.109). Other con-

cerns revolve around aspects of reader skills and training and their effect on the think-aloud verbalizations.

Another is the interference with the reading process itself since in a real reading situation overt verbalization does not occur; thus, it slows and distorts the reading process. And having to talk "on the spot" will also involve some sacrifice of accuracy and explicitness on the part of the reader.

Interestingly enough, however, verbal reporting (or protocol analysis), is not a new technique. Such reports were first used in late 19th century and have since been used and interpreted according to quite different methodologies. The advent of behaviorism which brought into play the idea that psychology should be empirical and based as much as possible on experimentation, however, ruled out introspection.

In the late 1950s, the direction of psychological research began to change. The emphasis again shifted from observable behavior to exploration of the less observable complex mental processes and the acceptance of the need to be explicit about internal symbolic mechanisms. Cognition, rather than behavior became the key issue, and the source for the explanation of thinking was thought to lie with information processing theory (Lindsay and Norman, 1972).

3.0.2. An Overview of Introspection as a Research Methodology

Verbal reporting of internal processes was first used as a systematic means of self-observation by the structuralist psychologists in the late 19th century. In the course of the years to follow, verbal reports have been used for widely varying purposes and interpreted according to quite different methodologies. In the early period, they were the mainstay of classical introspection (Titchener, 1912), but were later used by the Würzburg and Gestalt psychologists to analyze strategies used in problem solving (Selz, 1913, 1922; Wertheimer, 1945). In the years to follow, they were used in the clinical analyses of thought and the development of children's thinking (Freud, 1914; Inhelder & Piaget, 1958), but recently they have been used primarily in the study of problem solving in the field of human information processing (Newell, Shaw, & Simon, 1958; Newell & Simon, 1972).

As mentioned before, the reappearance of this methodology has not been smooth. Critics opposed to introspection claim that it is impossible to report accurately on any higher order mental processes because they would have little or no access to these processes. These anti-introspectivists who were led by Nisbett and Wilson (1977), put forward several claims. These claims range from the human inability to report accurately on the effects of particular stimuli on higher order inference-based responses to claims insisting that people do not necessarily interrogate a memory of the cognitive

processes that operated on the stimuli but base their reports on implicit a priori theories about the causal connection between stimulus and response. They also suggest that even if subjective reports about higher mental processes were correct, they are not due to direct introspective awareness but to the incidentally correct use of a priori causal theories (Nisbett & Wilson, 1977).

In this respect, however, Smith and Miller (1978)--critics of the anti-introspectivists--find some incongruity in the claims made by the two people above. Earlier, Nisbett and Wilson (N&W) had contended that since people undoubtedly have more knowledge of their emotions and plans than another independent observer, introspectivists have erroneously concluded that they have direct access to their mental processes. To illustrate this, N&W suggest that people who believe they hate other people who slap them on their back will use this knowledge to explain this feeling in such a situation. It is merely that knowledge and not any introspective access to mental processes which makes this explanation superior to that of the outside observer.

At the same time, N&W have also cited a study by Latane and Darley (1970) where subjects were asked whether the presence of others in the room influenced the likelihood of their running to help someone in distress in the next room (c.f. Nisbett and Wilson, 1977: 241). Subjects' inability to report on this was regarded by N&W as

evidence of their lack of access to process. Now, since the only difference between the two kinds of information (i.e. that one hates being slapped on the back and that one is likely to dash to answer someone's call for help if there are other people standing around) is that people in general are able to report on the first and not on the second, there is no reason to consider one content and the other process (Smith and Miller, 1978: 360).

Other pro-introspectivists, such as White (1980), also draw attention to the unsatisfactory definitions of "process" and "product" in N&W's study. He contends that it is easy "...to fall into the trap of calling everything that gets into consciousness "product" and everything else "process;" if we decide to use consciousness as the criterion for making the distinctions, then the product/process viewpoint becomes true by circularity" (White, 1980: 106). According to White, processes can be divided into sub-processes right down to the firing of individual electrical impulses or neurons, and, as such, a decision as to the level at which processes should be separated has to be made. Since there is no consensus on where this separation should be made, the process/product viewpoint is not very useful. What can be said of it, however, is that if processes are large-scale entities, then almost nothing can be conscious, and if they are small-scale, then a substantial amount can be conscious. Moreover, since any statement is compatible with the product/process

viewpoint, it is impossible to derive any experimental prediction from it. Thus, in White's view, Nisbett and Wilson have not succeeded in proving that people have introspective access to the products, but not to the processes themselves.

There are also questions regarding Nisbett and Wilson's assumptions about the nature of consciousness. Their contention was that since people cannot report on given processes, those processes are therefore beyond the reach of introspective access--in other words, beyond consciousness. White contends that any verbal report must rely on memory, and as such a lot more of any given process must have been conscious than what was actually verbalized in the report (White, 1980: 107). He suggests that people are much more likely to report that something was done consciously when they have paid close attention to it (as in some non-programmed sequence of behavior such as defusing a bomb). On the other hand, after driving apparently distracted along a highway for five minutes or so, when we suddenly "snap out of it," does not mean that the driving was not done consciously. This, however, is not because we cannot remember going through all the actions of driving, but rather because we were not paying close attention to the peripheral details of the road. In other words, according to White, we infer lack of consciousness of output from grossly reduced attention to perceptual feedback (p. 107). Thus, in the experiments cited by Nisbett and

Wilson; where subjects were not asked to pay close attention to certain stimuli--where in some cases, those stimuli were deliberately camouflaged (Nisbett and Wilson, 1977: 238)--it is inferred that from the subjects' failure to report the process that it was beyond consciousness.

Criticisms are directed not only to their theoretical assumptions but to their methodological basis. While they regard incorrect verbal reports as illustrating their point that people have little or no direct introspective access to mental processes, they also regard correct reports as illustrating the same thing. This means that their hypothesis cannot be falsified simply by showing that there are occasions when people's verbal reports on their mental processes are correct. In this way, then, they lock themselves in an unassailable position, safe from further inquiry.

3.0.3. Introspective Reports in Second-Language Research

Although there has been quite a long tradition in second-Language (SL) research for borrowing introspective methods as employed in linguistics (e.g. the elicitation of native speakers' intuition about what is grammatical, acceptable or appropriate in their language as means of providing the empirical tool for linguists working in the Chomskyan tradition) and sociology (e.g. questionnaires, rating scales as means of assessing learners' factors such as attitudes, learning styles, motivation, etc.), the use

of verbal reports similar to those in cognitive psychology is a fairly recent development. This fairly recent methodological innovation in SL research comes as a result of the paradigm shift which now allows introspection to be used as a supplementary, or even as an alternative procedure to understand SL learning.

For some time now, second-language researchers have been aware that learners can provide useful insight into the strategies at work in their learning. This was demonstrated by Kenyeres and Kenyeres (1938), whose study revealed the importance of verbal protocols in understanding the syntactical principle of a seven-year-old girl, Eva, learning French as a second language. Had this young girl not explained why the form "je fera" and not "je ferai" ("I will do") was used, the observer would never have learnt that it was because she was a "la" (the feminine definite article) that her verb ending was the way it was. It was only through the verbal explanation given by the girl herself that her system of relating verb endings to subject gender was revealed. Without it, the observer might never have learned the organizing principle whereby the erroneous form was produced (cited by Gerloff, 1985).

Despite this long awareness that there was possibly a more active role for the learner to play in the research process, it is only in the past decade that SL researchers have begun to experiment with methods which involved the learner's own verbal report on their learning. The intro-

spective methods which have been used by second-language researchers to date include learner diaries where the learner keeps a running journal of thoughts, feelings, and reflections while learning the language (Schumann & Schumann, 1977; Rivers, 1979), and protocol analyses, where the subject's verbal report is recorded, transcribed as a protocol, and used as data. This has been used effectively to establish a model of writing processes (Flower & Hayes, 1979, 1980) as well as in various areas of SL research including reading comprehension (Hosenfeld, 1977, 1979; Sarig, 1985), language learning (Cohen & Robbins, 1976; Rubin, 1981) and translation (Dechert & Sandroock, 1984; Krings, 1984; Lorscher, 1984; Gerloff, 1985).

3.0.4. Introspection and the Working memory

It must be remembered that any think-aloud verbalization (and for that matter retelling and writing) entails the use of the verbalizer's working memory (WM). It is the working of this memory system that most researchers are trying to tap into in order to understand why verbalizations occurred the way they did. And for this reason, too, a model of the WM needs to be looked at if there is to be any understanding of the connections between the two at all.

For this purpose, the WM by Baddeley (1982) has been selected.

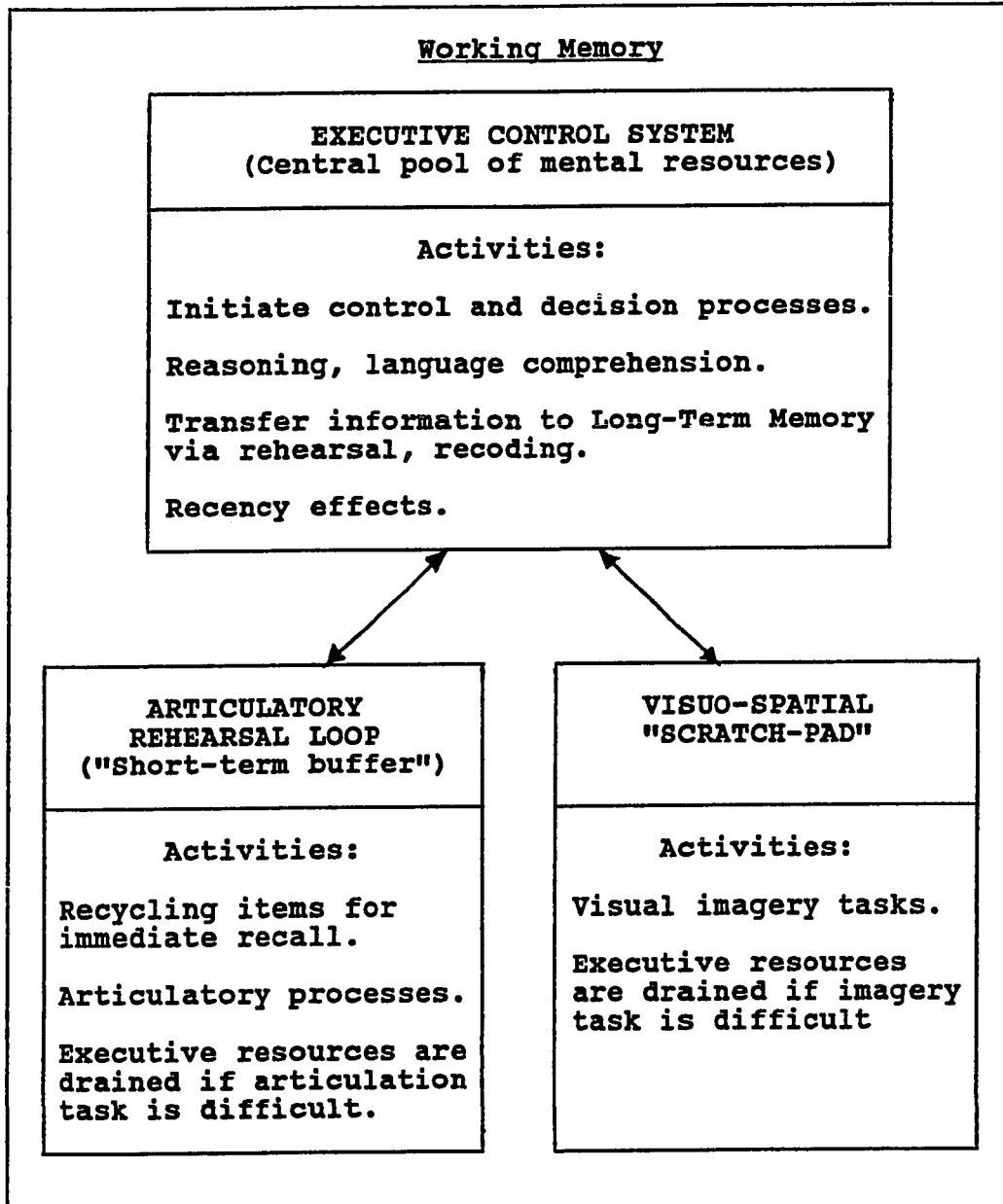


Figure 3: Baddeley's Working Memory
 (As described in Salame and Baddeley, 1982)

According to Baddeley, WM is responsible for the active mental effort of reasoning and language comprehension as well as for the transfer of information into Long-

Term Memory (LTM) by way of rehearsal - i.e. a deliberate recycling or practicing of the contents of the Short-Term Store (STS). Based on this model, initiation of the reading process (on which the think-aloud in this study is based) will first be carried out by the central Executive Control System, and the reader will read until a "natural break"--that is, the end of meaning unit--is reached where information can then be placed in the Rehearsal Loop. Within this short-term buffer, selected information will be processed, embellished whenever possible with related items recalled from LTM. This embellishment can only take place depending on how familiar the reader is with the topic, text structure, and author's biases. Atkinson and Shiffrin (1968) proposed that there are two effects of rehearsal. First, rehearsal maintains information in the STS, preventing it from being lost or displaced by other information. Second, the longer an item is held in Short-Term Memory (STM) by rehearsal, the greater the probability that the rehearsal will also store the item in LTM. Basically, this position states that rehearsal "copies" or "transfers" the item into LTM, with the strength of the LTM trace depending on the amount of rehearsal.

It is within this buffer zone that much of what is hypothesized as happening in introspection takes place. Within this zone, it is hypothesized that readers make resolutions on the amount of textual information that they

want to process at a given time, the kinds of connections (between text and background knowledge) that they can make, and the kinds of textual information that they can summarize and may wish to store in LTM. All these resolutions will be done recursively until readers come to the end of the text.

The role of the WM, therefore, is central both to think-aloud verbalizations and reading comprehension. Sometimes, however, due to task difficulty, reading processes become de-automated, and, hypothetically, it is during these instances that a lot more of thinking-aloud is bound to occur. Baddeley and Hitch (1974) suggest that de-automation is the result of cognitive resource overload. When this occurs, readers need to operate with their "executive management" skills. These skills include skills in monitoring the availability of resources required to accomplish the task at hand, monitoring the quality of information in working memory--to make sure that it is being maintained adequately and not decaying, and most importantly, monitoring the comprehension of input to insure that things are going on smoothly.

This then brings us back to the concepts of monitoring and cognitive economy. "Self-monitoring" according to Baddeley (1982) refers to one's awareness of how well one is doing in a situation that demands memorization or learning. "Cognitive economy," on the other hand, stresses the selection of information to be stored. Due to "the sheer

quantity of information involved...the human subject's memory...[should] therefore contain as little redundancy as possible and...[should] contain stored facts only when these cannot otherwise be generalized or inferred," (Quillian, 1969: 228). According to Flavell and Wellman (1977), adults are fairly proficient at generating strategies for remembering, at developing methods to rehearse material they realize will be hard to learn. Their metamemory processes include the awareness that things do not merely "get into" memory; they must "get them in" by performing some intentional activity.

There are two major kinds of rehearsal, each with different effects on storage (Craig and Lockhart, 1972) namely "maintenance rehearsal" (a low-level, repetitive kind of information recycling) and "elaborative rehearsal" (a complex kind of rehearsal that uses the meaning of the information to help store and remember). When information is subjected to elaborative rehearsal, according to Craig and Lockhart, it is stored more deeply in the memory system. As a consequence, material that is rehearsed elaboratively should be more permanently available for retrieval from memory - in short, should be remembered better. This is an important concept because it should have certain implications on the recall of information among this study's set of readers.

Other important memory components which have direct implication for the WM are the semantic and episodic

memory (Tulving, 1985). By semantic memory, Tulving means the kind of world knowledge, including knowledge of language, that a person has. Semantic memory is also conceived to be the all encompassing, permanent storehouse of generic information that is typically similar among individuals that share and belong to the same culture and society. Episodic memory, on the other hand, is a 'personalized' kind of reservoir; full of information which is particular to the individual only. So, for example, if the concept of "school" is common to everyone at the semantic level, it will be specific to the individual at the episodic memory level. These two forms of knowledge, however, are not separate, compartmentalized structures but are in an interactive and interdependent relationship. Semantic knowledge, according to Tulving, is derived from episodic memory by a process of abstraction and generalization. Episodic memories are interpreted and classified in terms of general semantic knowledge in the form of schemas and scripts.

	Episodic	Semantic
Type of information represented.	Specific events, objects, people.	General knowledge facts about the world.
Type of organization in memory.	Chronological (by time) or spatial (by place).	In schemas or in categories.
Source of information.	Personal experience.	Abstraction from repeated experience or generalizations learned from others.
Focus	Subjective reality: the self.	Objective reality: the world.

Figure 4: The Episodic-Semantic Distinction

The Episodic-Semantic distinction given in Figure 4 above is prominent in any given task. In a reading context, a text contains words, clauses, cliches, and sayings which, at the semantic level, can be read and deciphered quite easily by a proficient reader. If the text read is particular to the culture of the reader concerned, understanding it at the episodic level presumably will not be a problem because the reader would have the required background knowledge. Problems arise when text is written by someone outside of the reader's cultural group. Consider the following sentence:

"The man cut the ladies-fingers and threw them into the boiling water."¹

1. Sentence used in presentation for a seminar in Psycholinguistics (1986).

This particular sentence received different responses from three different cultural groups of students. A typical response from the American group was, "That is gross!". A Spanish student responded by saying that she couldn't understand why "a biscuit" should be cut with a knife and thrown into any kind of water for that matter. A Malaysian, on the other hand, responded that it is quite natural for anyone to boil "okra." ²

Based on the theoretical perspectives given so far, the readers in this study (who can be hypothesized as competent readers) would be monitoring their intake and understanding of a text, omitting redundancy wherever necessary. With regards to the think-aloud task in this part of the study, the automaticity of retrieval of the two types of memories--semantic and episodic--should be displayed in participants' verbal protocols, and the discrepancy between the retrieval of any of them might be of some interest to researchers and teachers alike.

3.0.5. Validity in Introspective Studies

As Ericsson and Simon (1980), White (1980), and others have pointed out, it is unsatisfactory to condemn verbal report as "introspection" without regard to the design and methods used in the research. Factors such as when and where the research was conducted, what the subjects were asked to do and how, and when the verbal report

2 "Okra" are called "ladies' fingers" in Malaysia.

was given in relation to the task itself, will bear greatly on the nature and significance of the verbalization. Clearly, therefore, a study cannot be judged valid unless these factors are reported with the results of the research.

With a view to providing parameters whereby these factors might be described, Cohen (1987) has identified three basic categories of learner report data. The first of these, which he terms "self report," refers to generalized statements which the learner makes regarding his learning behavior (e.g. "I'm a 'speed listener'....I make a quick search for the key words, and if I don't know them, I try to figure out their meaning from context"). Such statements are usually based on the learners' beliefs about their learning rather than the observation of specific events. The second of Cohen's categories is "self observation," which can be done introspectively or retrospectively, but both referring to the inspection of specific language behavior. However, since most loss of information from Short-Term Memory occurs immediately following the mental event, Cohen insists that data from immediate introspection may be only slightly more complete than data from delayed introspection. Cohen's third category is "self-revelation," disclosed through "thinking aloud," whereby

...the subject just lets the thoughts flow verbally without trying to control, direct, or

observe them (beyond certain instructions which an outside investigator may have given). Thus, "think-aloud" data are, by their very nature, unanalysed and without abstraction.

(Cohen & Hosenfeld, 1981: 286).

Cohen also identifies six major factors which characterize the data obtained from these three types of verbal report:

- (1) the number of participants: (i.e. the number of investigators and participants that take part in the data collection process). Subjects may collect data by themselves, as in the case with diary studies in which no directions are given by outside investigators.
- (2) the research context: (i.e. when, where, and how data is collected). Data can be collected in various situations; classroom, language laboratory, etc., and with varying degrees of formality.
- (3) the recency of the event: (i.e. the proximity of the verbal report to the actual learning event). Think-aloud data are obtained concurrently with the task being performed, while "self-observational" and "self-report" data are retrospective and, therefore, can vary with the time the

learning event takes place.

- (4) the mode of elicitation and response: (i.e. whether the elicitation of the verbal report data is done orally or by means of written instructions, and whether the response is also verbal or written). Both types of response can be videotaped, and in this way they can provide a record of the events and may help in subsequent analysis of the data.
- (5) the formality of elicitation: (i.e. the degree of formal instruction imposed on the elicitation). Verbal data may be collected by means of highly structured elicitation, such as a questionnaire, or a set of fixed questions asked orally, or by a more informal approach using more flexible questions, or leaving the subjects free to provide information along lines which they themselves determine.
- (6) the degree of external intervention: (i.e. the extent to which instructions shape the participants' reporting process). The researcher should, therefore, be aware of the extent of this influence.

(Cohen, 1987: 86-88)

Cohen suggests that it is only in the light of information obtained under these six headings that judgments about the validity of the research can be made and interpretation adequately carried out.

3.0.6. The Importance of Introspection In this Study

As with all the other studies in introspection, this study uses the introspection methodology to draft the cognitive and metacognitive processes of an on-going task. It is also an attempt to look at ways in which coded information in texts is recoded by individual readers for purposes of storage. Unlike other studies, though, introspection in this report will also form the basis for the analysis of data from two other methodologies--retelling and freewrite. The idea is to see how much and in what manner data in introspection per se can reflect the selection and expansion of any idea from the text read in the two tasks following the reading. The aim of this exploratory study, therefore, is to gauge the correlation (if any) between data gathered from concurrent Think-Aloud--in reading--and other data connected to the same task required by that reading. It is an exploratory study and an attempt to look at reading in, metaphorically speaking, a holographic manner.

CHAPTER III

PART TWO

3.1.0. Retelling Analysis (Immediate Recall)

The next methodology to be used in this study utilizes retellings to look at readers' encoding strategies and the information they report after reading. While participants' Think-Alouds may reveal strategy-use during reading, they do not necessarily reveal the information that they could have stored in their long-term memory (LTM), or how this stored information compares with the texts read. The retellings, it is hoped, will illuminate how text and prior knowledge work together in constructing the-long term storage.

3.1.1. Text processing

The question of how text is processed has been a continuing one. Narrative texts have received most of the attention, expository texts have received somewhat less, and other types of texts have received virtually no study at all. According to Voss and Bisanz (1985), a text is comprehended and remembered based on two factors: (i) the structure of the text itself and (ii) the knowledge utilized by the individual reader. As noted in the opening

chapter of this thesis, studies on the structure of the text have been carried out extensively, but studies of readers need more attention. This need has been voiced by people in different disciplines who are interested in the process of reading comprehension: in the field of artificial intelligence, Miller (1981), in sociolinguistics, Heath (1983), in the reading field per se, Tierney (1989), and in Reading Education, Harste and Burke (1989). All of these theorists reemphasize the important fact already voiced by Strelka (in Hartmann, 1953), that written symbols by themselves are lifeless until they come into contact with the living mind of the readers. It is this mind and the different modes of resuscitation of the lifeless symbols by readers that are of interest to them.

3.1.2. Text/Content Structure Analysis

In order to examine the reading comprehension processes and encoding procedures used by readers, a method of identifying text structure is required. This is necessary because first, whatever information is processed from the text can only be determined if the researcher knows just what kind of information was presented in the text itself (Kintsch & van Dijk, 1978). Second, researchers have also hypothesized that the (encoded) representation of the text in memory is parallel to their analysis of the text structure (Just & Carpenter, 1980). Third, (though not really the purpose of this paper), identifying

text structure has also been found to be useful in dealing with problem of generalizing research findings with a particular passage to other texts (Rumelhart, 1977; Meyer & Freedle, 1984).

Models of memory representations based on text analysis procedures are usually posited for certain types of learners (e.g. skilled readers with relatively low prior knowledge of the text topic as opposed to skilled readers with high prior knowledge) who read under certain types of task conditions (e.g. reading for optimal comprehension and recall of text information with immediate recall as opposed to delayed recall). However, the task of analyzing text structure is not simple. First, there is the consideration of the research goals themselves. If the research goal is to ascertain recall of the gist of passages, then the analysis structure may be quite different than if the goal is memory storage of inferences (Meyer, 1985). Second, there is the consideration of the complexity of the writing and the reading process themselves. In writing, the underlying structures of the text may be implicitly or explicitly expressed. At the same time, ideas are sometimes presented not in a sequential, logical manner. Thus, their relationships may not be apparent to the readers. In the reading process itself, readers with differing prior knowledge and purposes may perceive the structure of the information in the text differently. Third, the underlying mental processes involved in dif-

ferent types of discourse (descriptive, narrative, etc.) for different purposes (to inform, to persuade, to entertain, etc.) also differ (Brewer, 1980). And last, the multiplicity of disciplines involved in this area (e.g. linguistics, education, rhetorics, folklore, artificial intelligence, psychology, etc.) is so vast that it is also worthwhile to diversify the approaches and goals for analyzing text structure.

For the purpose of this study, the learners who participated were are, for the purpose of this study, considered "skilled" readers. They were hypothesized to have a considerable amount of background knowledge on the topic to be read. They were required to read for optimal comprehension and to display this comprehension in both the immediate and delayed recall modes (this will be dealt with in Part Three under the Freewrite section). The research goal is to examine the kind of information that participants select from texts and store in LTM. And the prose selected is written in a straightforward style by writers who are interested in sharing their own experiences with other people in similar fields.

In order to examine the kinds of textual information that participants will select for long-term storage, a method to analyze the information given in the selected texts is needed. For this purpose, a simplified method of text content structure analysis, adapted from Meyer's (1985) model of text structure analysis is used. Although

Meyer's system is concerned with the correspondence between what is given in the text and what is remembered by the readers, it is used in this study as merely a means to understand what is given and what is selected by the readers for purposes of learning.

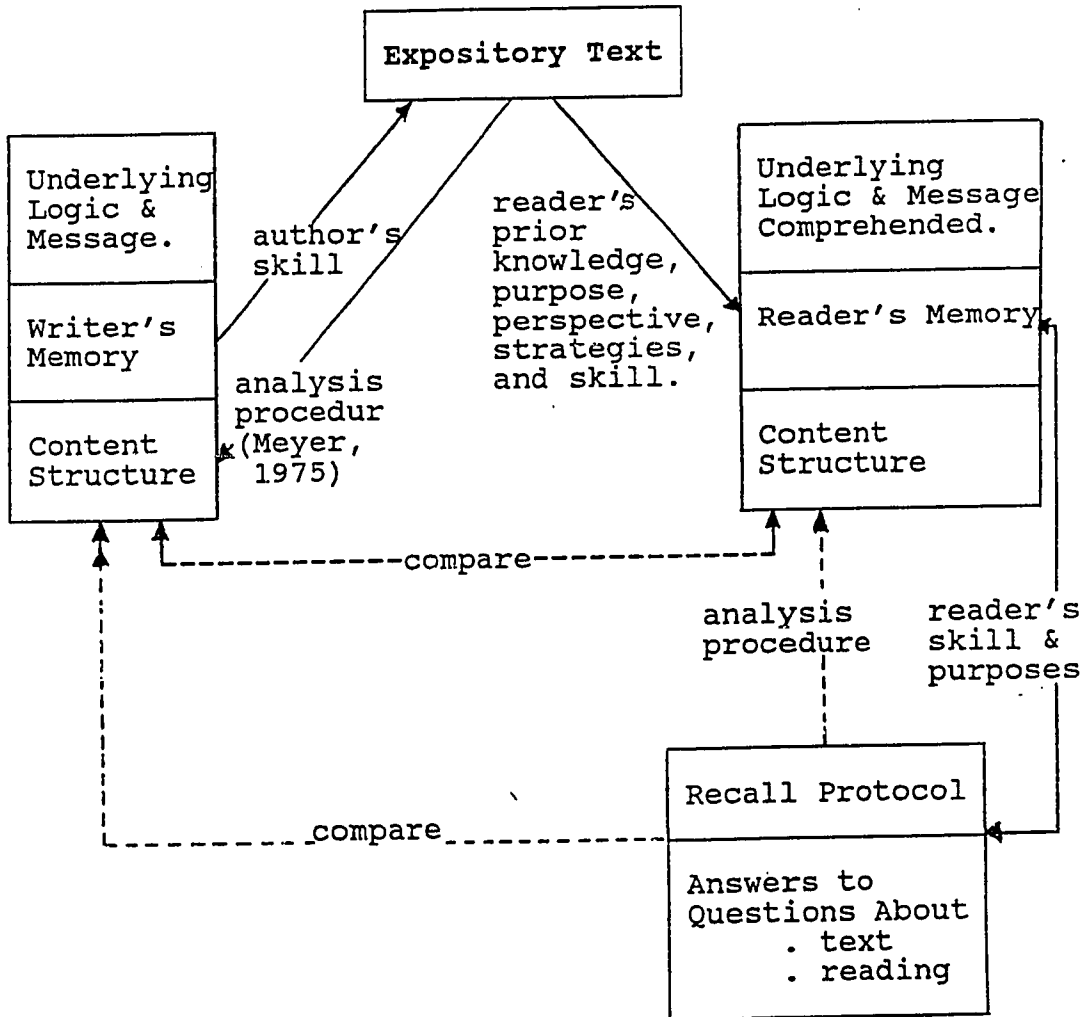


Figure 5: Complexity of Prose Learning Paradigm
(Meyer, 1985: p.15)

As shown in this diagram, the match between the logic and message intended by the author and that identified in the analysis of text structure varies with the author's skills in presenting information, the prose analysis procedure used, and the skill of the analyst using the procedure. In most prose learning experiments, the analysis of the text structure is then compared to what the readers recalled from the text. The similarity between the analysis of the text structure and what the readers write about what they remember from the text depends on the readers' prior knowledge, purpose, perspective, strategy, and their level of reading skill (Meyer, 1981). According to Meyer, if the reader's purpose was to understand the topic from the author's perspective, then the correspondence between the analysis of the text structure and the recall protocol will increase with reader skill, exposure time, and recency of presentation.

Based on this perspective, the comprehension process will follow a structure strategy (Meyer, Brandt, & Bluth, 1980). This process involves an active effort to discover the superordinate structure (main idea) relationships and other information that are attached to them. The recall protocol of the readers can be analyzed to detect differences in the organization and types of information recalled. The degree of readers' protocol and text match is then taken as a measure of comprehension.

For the purpose of this paper Meyer's (1985) text structure analysis will be adapted. As Meyer has men-

tioned, the selection of any prose analysis procedure really depends on the type of subjects studied and the research questions asked. Meyer's approach, i.e. with the scoring of top-level structure and discrete scoring of relations and content, can best examine variations between text and the reader's memory and manipulation of it.

3.1.3. Why Text/Content Structure and Not Content Analysis?

There are different ways to analyze texts. Some methods of analysing text can be time consuming and tedious. For example, with the system of text content analysis used by Kieras (1982), the researcher would first have to divide each sentence into "propositions, and each proposition would then be analysed into "cause," "effect," "modifier," etc., etc.. Because of the rigorous exercise required by this method, most content analyses were done on comparatively short passages which contain words ranging in number between 71 to 634.

This method of text content analysis is common in studies where a precise and "scientific" method of analysis is required. However, real texts are usually considerably longer than those used in the studies mentioned. Therefore, a less structured and exhaustive procedure is required, not only for reasonable research methods but also to suggest feasible enrichment activities for teachers. Since the purpose of this study is not only to

see the relationship between information stored and information retrieved after each reading done by students in real classroom situation, the method of content structure analysis I have decided to use should be adequate for this purpose and should be one which is comparatively simple to use.

CHAPTER III

PART THREE

3.2.0. Freewrite Analysis

The last method to be discussed in this chapter is Freewrite, a delayed written recall of an article that has been read. In the Freewrite task, the main focus is to examine the kinds of information that participants select from the text and why. Since almost all college expository reading tasks in Malaysia are related to learning something new, reading is associated with students' efforts to make sense of their own thoughts. This entails a concerted effort on the students' part to interpret the information in the source texts for their own purposes, to relate the information to their own knowledge, and to learn new materials.

3.2.1. Studies in Writing

In a study of secondary students, which compared reasoning strategies used in responding to study questions, note-taking, and essay writing, Langer (1986) found that "the greatest variety of reasoning operations occurred during essay writing, suggesting that this type of activity provides time for students to think and ponder

their growing ideas" (405). As for learning, she found that "topic knowledge increased most from essay writing, next from note-taking, and least from answering the study questions....This suggested that the extended writing activity gave the students the opportunity to think not only about the information in the passages they had read, but also to integrate it into more highly organized units of knowledge" (405).

It has also been argued that, in writing, the types of writing assignments and their timing are at issue. Although some writing assignments can be dysfunctional if they are too limiting in their constraints, the act of writing anything connected to a reading has the potential of contributing to a greater understanding of the material read. So it seems that writing demands more direct confrontation with one's own thinking than does simply reading. Furthermore, learning can be facilitated through the reinforcing processes of writing. These reasons, according to Flower (1987), suggest that it might be not only wise to ask for written responses to reading materials, but also better to leave open the form in which these responses might be developed.

In the present study, the form of writing task that was required of the participants was what Harste (1989) has called Freewrite. The Freewrite task is based on a text which has been read and retold. Participants are asked to write their responses to the article as to how it

has affected them as students and as teachers of ESL after graduation from the university. This topic constraint, if it can be called that, is not meant to limit participants' personal responses. It is hoped that by confining their responses to the text, they would be encouraged to synthesize information from the text they have read and relate it to their everyday lives and to what other knowledge they might want to bring to bear on this task.

Flower and Hayes (1984) have described composing as a "goal-directed" thinking process, directed by the writer's own network of goals. However, "[g]oal-setting, when meaningful, is influenced, or even controlled by the complex interpretations of the demands being made on the individual at a given time and fits into that individual's present life in a particular way" (Sternglass, 1988: 114). This concept of goal-directedness in writing may lead us to see what aspect of a text that participants chose was emphasized, processed, and embellished with more, or less, intensity. In other words, it was hypothesized that the Freewrite response of the participants would depend on what the participants perceive as important at that particular point in time of this study. (Refer to Flower's [1987] Model for Discourse Construction next page). The participants' written work, therefore may or may not show any variation based on the postulates given.

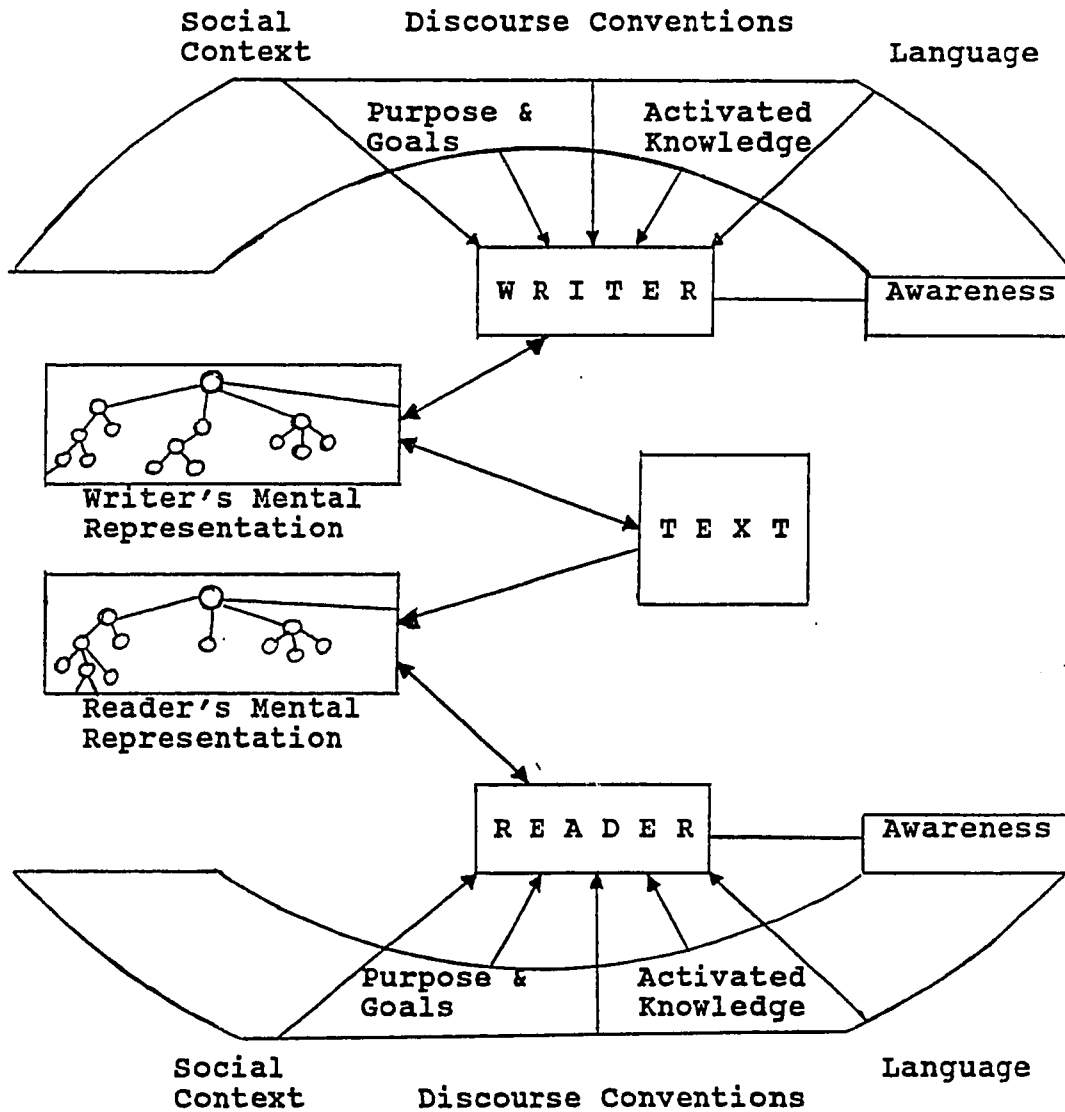


Figure 6: A Conceptual Model for Discourse Construction
(Flower, 1987)

In this model, the constructive processes of reader/writer are at the center of the stage. If we take

the writer as an example, we see an outer circle of external forces, which includes social context and ideology, discourse conventions, language and so on. These impinge on any given act of writing. These external constraints can be distinguished from an inner circle of activated knowledge relevant to this particular act of composition. This separation simply reflects the difference between the information a writer could respond to and that which is actively represented in the writer's mind in a given performance--it is the difference between what he/she knows and what he/she uses at any given moment. Thus, what the Reader/Writer in this particular study knows may very well be reflected in her Retelling, but the information that she chooses for her writing task may or may not be the same as what is in that Retelling. Now if this difference can somehow be traced back to her Think-Aloud protocols, then something more substantial can be said about the reading-writing relationship researchers have been talking about.

At the same time, however, since this inner circle of activated knowledge symbolizes the active forces which influence a given act of composing, the writer's purpose or goals also figure as a major element in the scheme. Although participants' writing goals will be constrained to a certain degree, their written performance could still be different, if what the above model postulates holds to be true; because not only will the selection of informa-

tion differ but how meaning is explicated will also differ from one participant to the next.

3.2.2. The Usefulness of Text/Content Structure Analysis In This Research

Text analysis is not frequently used as a method for understanding the composing process. Perhaps writing researchers have assumed that analyzing texts is a way of studying product and that to study process, one must do something else; such as thinking aloud as one is doing the writing act (Hayes & Flower, 1980). This conception is challenged by the work of de Beaugrande (1980, 1982), who draws heavily on text analyses for insights into the cognitive processes of composing. Text analysis may provide insight into the knowledge structures that direct the composing process and which are relevant for understanding the process. Therefore, this aspect of the research also hopes to see what textual structures will be brought into focus during writing and whether these observations will also be substantiated by the Think-Aloud and Retelling data respectively.

CHAPTER III

3.3.0. Conclusion

3.3.1. Why the Need For Different Methods of Data Collection In Trying to Understand the Reading-Writing Relationship

In order to understand reading and writing and what they do to the general learning experience of students in classrooms, it is necessary to trace not only how comprehension is arrived at but also how this comprehension is used for other academic purposes. It is also necessary to see how the various social, educational, political, and cultural environments that impinge upon them are manipulating them and are being manipulated at the same time. Therefore, it is not merely a question of what and how, but also why this set of Malaysian readers' reading/writing strategy uses are the way they are. It is a way of looking at a particular activity from different angles, hoping to gain a holographic view of the working of the mind.

CHAPTER IV

4.0.0. Data Collection and Selection of Subjects

The data for this study was collected in Malaysia at Universiti Pertanian Malaysia (UPM) during the first semester session of 1989-1990. Arrangements were made with the Dean of the Faculty of Education and the faculty members in the English Language Department to select participants who were students of either junior or senior class standing and who were doing a Bachelors Degree in the Teaching of English as a Second Language (TESL) in that department. Participants comprised a population of former teachers from the three major ethnic groups in Malaysia--Malay, Chinese, and Indian--who have taught English as a Second Language (ESL) in both Primary and Secondary schools throughout West Malaysia. These participants were each paid the amount of M\$25.00 for their participation in the study.

Due to the nature of the research procedure, which entailed a lot of taping and writing time in the presence of the researcher, and due to lecture-time constraints on the part of the participants themselves, those selected for the study were all females. This was necessary, because being a female herself (and based on the cultural ramifications of the nationalities of all the participants

concerned), the researcher felt that it would be more appropriate to be alone in the presence of another female, in an enclosed room, than with a male student. Besides, it was felt that the female participants would feel more at ease and would be able to communicate better with another female and thus provide a richer source of data for the study.

Twenty students, "proficient" in English, volunteered to take part in this study. Their age ranged between 33 and 42. The evaluation of their English language proficiency was not based on the result of any special English language proficiency test. Rather, these participants were recommended by the teachers who attested to their high level of spoken and written English language capability. Of those recommended, only twelve were selected based on the following criteria:

(a) Some similarities in academic and professional background.

The participants had many characteristics in common. All of them completed their primary and secondary education and their teacher certification in the English medium. Thus all of them would have had at least 18 years of formal instruction in the medium of English in all subjects, both at the school and college level. All of them had been teachers of ESL for an average of 10 years, and their ages ranged between 34 and 42.

(b) Flexibility in class-time schedule.

This was an important factor as each participant would be required to be involved for at least four hours to complete all the tasks required in this study. This factor had to be considered carefully also because the researcher herself had a time constraint in the data collection process, and the time allotted to her would have to be utilized carefully since she would have to be responsible for carrying out the different tasks with the participants on an individual basis.

(c) Fluency of participants' spoken English.

This was gauged from an informal talk that the researcher had with each participant. Participants were also informed that in the course of their doing the various tasks later on in the study, they could also use their own mother tongue to express themselves if the use of English was not adequate.

4.0.1. Preparation of the Reading Materials

Reading materials for the study had been selected in the United States by the researcher (with approval from her thesis director) prior to her returning to Malaysia. Three articles were selected, and they are by the various authors listed below.

- (a) Bholá, H.S. (Spring 1988). "Mediating between policy and pedagogy: A model of multicultural education." Educational Horizon, 1:1, pp.104-106.

(Passage length: 1,956 words).

- (b) Pinnell, G.S. (Fall 1988). "Holistic ways to help children at risk of failure," Teachers networking, 9:1, pp. 1, 10-12.

(Passage length: 2,124 words).

- (c) Goodman, K.S. (April 1987). "Who can be a whole language teacher?" Teachers networking, 1:1, pp.1, 10-11.

(Passage length: 1,797 words).

These articles were selected mainly on the hypothesis that they would be the kind of articles that university students in the School of Education in Malaysia are expected to read for purposes of information, or even for their own interest. This hypothesis was confirmed through a feed-back questionnaire--given at the end of the study--in which the subjects told the researcher that the articles were not only appropriate to their reading level but were also interesting and informative.

The articles were also selected with the view that they would be sufficiently difficult to prompt the use of a strategy for comprehension but not so difficult as to be frustrating. Baker and Brown (1984) state that learners are more likely to take control of their cognitive endeavors when they are faced with tasks of intermediate difficulty. The articles selected proved to be at that level of intermediate difficulty.

4.0.2. Practice Session

A practice run was conducted to familiarize participants (initially) in all the five methodological procedures to be used in this study. The participants were introduced to the different steps they needed to take; from thinking-aloud, to orally retelling what they have read and understood, reading aloud again (for Miscue Analysis), retrospectively what they had read, to the (free) writing of the passage read. Of these, only thinking-aloud and retrospectively were emphasized as the main procedures which participants selected for the study proper needed to be really familiar and at ease with. The emphasis on these two aspects of the research procedure is quite well founded. Since the English language curriculum in Malaysia stresses students' reading aloud in their classes, doing (oral) comprehension, and precis writing, the retelling, reading aloud for miscues, and (free) writing were deemed unnecessary. Thus, the participants in this project needed to be familiar with only the two procedures mentioned.

The article selected for this practice session was an article called "Current Thinking on Critical Thinking" found in Siegel and Carey's (1989), Critical Thinking: A Semiotic Perspective. Published by ERIC, Indiana University. Participants practised individually or with a friend at home. Their taped Think(ing)-Aloud, Retelling, and Retrospective Think(ing)-Aloud were collected by the researcher to see if there were any major problems to

address before the study proper took place. However, no discussion of the various tasks required in the practice session was carried out. This was done so as to discourage the participants from "seeing" any set pattern of response that they felt the researcher wished them to follow.

4.1.0. Taping Sessions

All taping sessions for the study proper were done in an air-conditioned recording room in the language laboratory of the Language Department in UPM. All sessions were recorded and monitored by the researcher herself.

4.1.1. The Concurrent Think-Aloud Task

The three articles were presented to each participant when she came into the language laboratory for the taping of the first (think-aloud) part of the study. Here, she would make the choice of which article she wanted to read based only on the title and the author of the article. Since all the articles chosen for the study were of about equal length (see length of article under each author) and at about the same level of difficulty, allowing participants to choose would at least make the reading act more natural if not profitable and enjoyable at the same time.

Before the taping proper began, I would ask each participant if it was necessary to go through the think-

aloud procedure again. However, the practice session given prior to the real exercise seemed to have given them enough confidence to do what the task expected them to do and we usually would not waste time on this again. During the taping session, each participant would read and think-aloud while I monitored the recording from outside. Before that, each participant would be encouraged to find a comfortable seating position in which she would feel relaxed--usually facing away from the glass window of the recording room, thus facing away from me--and then she would signal to me by either saying "I'm ready" or by raising her hand to indicate that the session could now begin. At the same time, I would usually try to make her feel at ease before each taping session. Based on my own observation (and from the feedback I get from the participants), my presence in the language laboratory area did not seem to disturb them.

Once the taping began, the participant was literally left on her own, and the only interruption from the researcher would be the indication for her to stop so that the cassette tape could be flipped to the other side or a new one could be inserted in the taping machine.

4.1.2. The Recall Task

After the concurrent reading and think-aloud session, the participant was asked to read the article again, this time silently. She was allowed a maximum of only fif-

teen minutes to read it this time. She was also told that she could make any kind of notes, either on the reading material itself or on a provided piece of paper, but that she would not be able to refer to these notes when she would do her Retelling task. Immediately after her reading time was up, she was asked to put the article aside and to jot down, in a brief fashion, only the main points that she thought would be important so as to enable her to retell the contents of the article in a coherent manner to another person who had not read it.

Once this was done, the participant would signal to me that she was ready to retell the article. At this point, I would go into the recording booth and the participant's verbal retelling would then begin. This session was also recorded.

4.1.3. The Freewrite Task

The freewrite usually took place between four to seven days after the completion of the think-aloud and retell tasks, depending on each participant's class-time schedule and the availability of the recording room, which also had the advantage of being air-conditioned. In addition, I was able to conduct a taped interview with each participant right after the freewrite session.

4.1.4. My Own Retrospection On the Data Collected

Over a period of six weeks, I met each participant in the language laboratory to tape her Think-Aloud and Retelling protocols. These two sessions took each participant an average period of two hours. I intended originally to include with the Think-Aloud and the Retelling a Retrospective Think-Aloud protocol followed by a Freewrite. These would have all been done during the same session and would have been part of the research data. However, since most of the participants did not stay on campus, it was impossible to arrange it that way. Besides, participants' own class schedules prevented even those who did stay on campus to do all the different tasks at one sitting. Hence, it was decided that the only way to solve the problem was to combine Think-Aloud and Retelling, and the intended Retrospective Think-Aloud protocol and Freewrite into two separate time slots.

However, after looking later at all the data together, I decided that I could not include the Retrospective Think-Aloud protocols since they reflected not the retrospection of the reading process itself but the choice of information selected in the retelling. Had I directed participants to retrospect why the information they selected was included in the Retelling, that data could have enhanced hypotheses that I would be making on information retrieval. But since the main task of this research was to look at the general process of information

comprehension, selection, storage, and retrieval, I decided that it would not be appropriate to include the Retrospective Think-Aloud data in this study but it could be used, perhaps, in another study later on.

At the same time, I had to disregard data sets from two participants. The first was solely based on number-- i.e. only one participant selected H. S. Bhola's article, and, as such, her set of data was disregarded. The second set of data was omitted because the participant concerned did not follow the directions given in the Think-Aloud and Retelling tasks.

4.2.0. Transcribing the Data Selected For the Study

4.2.1. The Reading Protocol

The recorded concurrent verbal reports on the reading tasks were transcribed verbatim. I did not use or adapt any coding model in analyzing the protocols because to do so might inhibit the coding of my data, and indirectly prevent me from looking for new findings on SL learners' reading habits and strategies. Each participant was assigned a number for easy matching with other data sets connected with her reading. Those who read Kenneth Goodman's article (total no. = 6) were assigned the numbers 1 through 6, and those who selected Gay Su Pinnell's article (total no. = 4) were assigned the numbers 7 through 10.

4.2.2. The Recall Protocol

As with the reading protocols, the verbal recall protocols were also transcribed verbatim, and these were then matched with the participants' brief jottings of main points (which have been retyped exactly as they appeared on participants' jotting paper) and stapled together. They were then numbered accordingly, depending on the articles read.

4.2.3. The Written Product

Again, as with participants' main-points jottings, participants' Freewrites were also retyped exactly as they were written and then numbered accordingly.

In the following chapters V, VI, and VII, the analyses of the different tasks will be examined and discussed in as much detail as possible.

4.3.0. Research Questions

Before embarking on the study proper, a number of research questions were framed following the concept of metacognition and protocol analysis methods, plus the concept of memory storage and retrieval. Original questions were framed at the outset of the study and these evolved during the course of data gathering, coding, and analysis to take the following form:

1. What kind of strategies do participants bring to the reading tasks?
 - (a) Do participants make use of the logical structure of the text to aid in comprehension?
 - (b) Do participants demonstrate evidence of planning the next move in the reading process?
 - (c) Do participants re-read to clarify the message?
 - (d) Do participants consult other sources to help clarify problems?
 - (e) Do participants activate their prior knowledge to aid in comprehension?
 - (f) Do participants check the outcome of their attempt to solve a problem ?

2. What kind of strategies do participants use, and what kind of information is included in the Retelling task?
 - (a) What kind of information do participants select to be included in their Retelling?
 - (b) Do participants elaborate in their Retelling?
 - (c) Do participants adhere to the information layout specific to the article they read in their Retelling?
 - (d) Do participants demonstrate a personal meaning in their Retelling?
 - (e) Do participants bring in some new information in their Retelling?

3. What kind of strategies do participants use, and what kind of information is included in the Freewrite task?
- (a) What kind of information do participants select to be presented in their Freewrite?
 - (b) Do participants adhere to the information layout specific to the article they read in their Freewrite?
 - (c) Do participants elaborate in their Freewrite?
 - (d) Is information selected for the Freewrite similar to that used in the Retell?
 - (e) Do participants take a stand in their Freewrite?

CHAPTER V

5.0.0. **Think-Aloud Protocol Analysis**

...it is time to abandon the careless charge of 'introspection' as a means of disparaging such [verbal] data. They describe human behavior that is as readily interpreted as any other human behavior. To omit them when we are carrying the 'chain and transit' of objective measurement is only to mark as terra incognita large areas on the map of human cognition that we know perfectly well how to survey.

(Ericsson & Simon, 1980:247).

5.0.1. Taping procedure

The concurrent think-aloud data collecting procedure in this study was carried out in the following manner. First, participants would report individually to the researcher in the Language Recording Laboratory. There, each participant was given a selection of three different articles by different authors. Based on only the individual author's name and the title of his or her article, participants were asked to select one article and to take it into the recording booth.

Once the participant had found a comfortable seating position--where she would not be too conscious of nor distracted by the presence of the researcher who would be

outside at the recording consul-- she would be asked if it was necessary to go through the think-aloud procedure once more. This was to make sure that she knew what she was supposed to do while reading the article. (In all cases, this was not necessary.) Then the microphone would be adjusted and its functioning tested. Then the researcher would leave the room and go to the recording consul to proceed with the taping proper.

This part of the reading task called for each participant to read the article out loud. However, when she came to a red spot (placed at the end of sentences by the researcher as a reminder), she was asked to stop reading and to talk about what she was doing and thinking as she tried to understand the phrase or sentence that she had just read. She was requested not to censor her thoughts but to be spontaneous with what she had to say if she had trouble understanding whatever was in the article--that is, to say out loud what she was doing and thinking as she tried to solve what was puzzling to her. She was also reminded that after the first few red dots, she would not find any more red dots marked on the consecutive pages. On these pages, the participant was expected to stop and think aloud at points in the article chosen by herself. She was expected to read as though she were alone and she must continue reading and thinking out loud until she finished the article. (The Think-Aloud Direction is given in Appendix C).

When the participant was ready to begin, she would signal the researcher--orally or through a prearranged hand signal--that the recording could now begin. From this point onward, the researcher would not interrupt the participant except to indicate to her when she needed to stop so that the researcher could flip the cassette tape to the other side or replace it with a new one. In this aspect of the recording, a reel-to-reel tape recorder would have served both parties better, but in terms of transportation and transcription, the cassette tapes proved to be easier as well as more practical later.

5.0.2. Transcription and Analysis

Before transcription began, tapes were sorted out based on the articles selected by participants. Each participant was then ascribed a number to determine the article read. The tapes were transcribed verbatim and each transcription was read through twice. On the first reading, the places where each participant had made her stops to think-aloud were noted and the specific line numbers in the article were marked. This was then followed by a second reading in which two other readers would read and analyze each participant's think-alouds, and after which a tentative list of categories would be made. The same procedure was done to the Think-Aloud protocols of the remaining participants. Subsequent reading after those analyses of all protocols allowed the researcher and the

two other readers to develop the following categories which have been subsumed under the superordinate categories labelled "Monitoring," "Schematic Referencing," "Making Personal Statements," and "Consolidating." (A sample of a participant's Think-Aloud is given in Appendix F.)

Monitoring includes statements which could indicate participant's method of selecting, attending, understanding (or lack of understanding), or ignoring information being processed. In Nisbet and Shucksmith's (1986) terms, these are the metacognitive strategies. These strategies, however, indicated instances where further assistance would be required from the cognitive domain to help make the information being processed comprehensible.

In this study, the term "monitoring" will not be so narrowly defined as to include only those strategies postulated by Nisbet and Shucksmith. In analyzing the think-aloud data from this set of participants, we found that the use of these strategies can be subsumed under a broader definition of the "monitoring" strategy. The reason for this grouping, I hope, will be apparent when the various examples of the categories are presented later in this chapter.

Schematic Referencing includes statements which seem to indicate that information from the text are being matched with those stored in long-term memory (LTM). Examples of verbal reports for the components listed under

this category will show a lot of overlaps as information from various sources in LTM are accessed and linked with new incoming information.

Making Personal Statements includes statements which show that the participant is expressing feelings of sarcasm, bias, or disagreement based on her own experiences. These statements are directed towards content or inferences derived from the text read.

Consolidating includes summary statements indicating that enough chunks of information have been gathered and understood and could now be recoded and stored in the LTM.

Under each of these headings, the various components which seem to appear quite regularly in this set of Think-Aloud data, will be arranged. (Refer to Figure 7 on the following page).

CATEGORIZING DATA

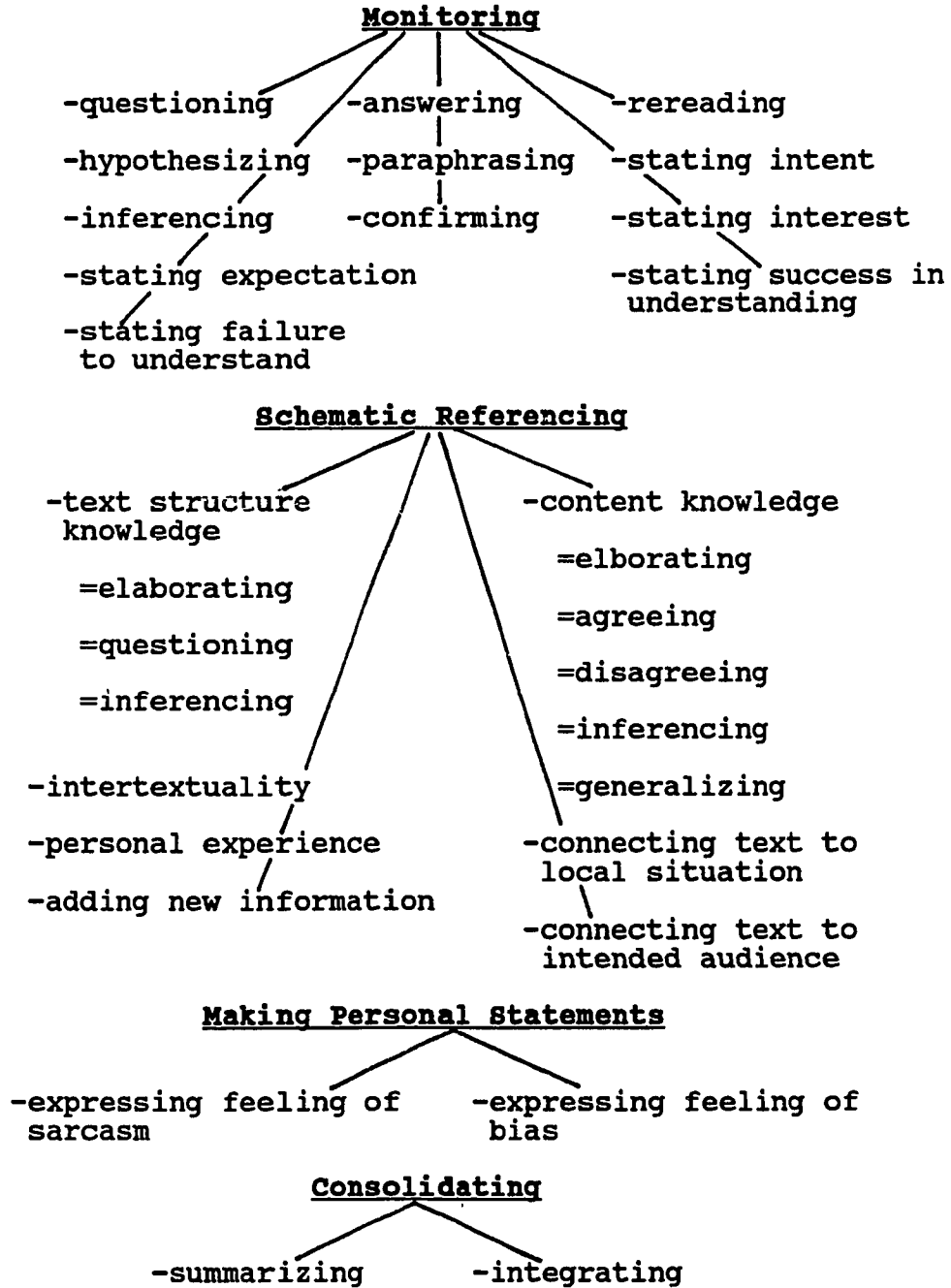


Figure 7: Think-Aloud Categories

The various components in monitoring, schematic referencing, making personal statements, and consolidating illustrated above should be treated as a list pertinent only to those which occur recurrently in the data gathered from the ten Malaysian college participants engaged for this particular study. Examples for these components are listed below. All of these components are text-based unless otherwise indicated.

5.0.3. Key to Reading the Examples From the Various Categories

e.g. Questioning - 5 (123): "What has this director got to do with the success in whole language?"

The number in front of the parenthesis is the number assigned (for purposes of transcription and coding) to each participant in this study. The number within the parentheses indicates the line in the article where the participant stops to read and voices her thoughts.

Sometimes, for the purpose of making the example clearer, a portion of the text read will be included, and this portion will be placed within square parentheses.

e.g. Disagreeing and questioning - 4 (250) : [Well, it's not hard to tell where Dick Anderson

gets the notion that an American teacher has to be outstanding to be a whole language teacher.] "Now, I don't like the term 'outstanding,' and who is Dick Anderson?"

5.0.4. Examples of Categories

(1). **Monitoring**

Questioning - 6 (23): "What is no. 1 here?"

Answering - 6 (23): " Oh, language and thinking in school.
This is a book. O.K."

Questioning - 2 (20): "I wonder who this Don Graves is?"

Answering and Hypothesizing - 2(20): "He must be somebody
connected to the language, I think."

Questioning and Answering/Hypothesizing - 10 (218): "Why?
Why isn't it necessary? Maybe the children are
more advanced."

Paraphrasing - 8 (15): "So, now, the first question is to
find the clues, what goes on in the head...the
process that goes on in the head."

Hypothesizing - 1 (175): "Ya. Probably because it's
already in them. So they can...whole lan-

guage...they don't use the term anymore."

Confirming - 1 (176): "Ya, that's it. Because they've been using this approach all this while, so they don't see any other approaches. They have nothing to compare it."

Inferencing - 10 (15): [...reading instruction to help children in jeopardy find the right path to literacy.] "So that these children would not be illiterates."

Stating Failure to Understand and Stating Intent - 2 (32):
"Still don't get what he is trying to talk about. I think I must read on."

Stating Failure to Understand and Rereading - 2 (41): "I don't understand that. I think I have to read it again."

Stating success in Understanding and Paraphrasing - 2 (41): "Now I understand. You must incorporate thinking with the language, then only will you have the development of the language."

Stating Interest - 6 (169): "Good, I need to know that. I think I do roughly know it, but let's see."

(2). **Schematic Referencing**

Personal Experience - 3 (263): "I tried to do this once... when I tried to do the process approach to teaching of writing. It was totally vetoed by, first, the senior assistant, and then the headmistress. She said it was a waste of time; and I was so frustrated at that time...the students were very, very articulate in their language and I felt that I could really develop their creativity. But those constraints...!"

Intertextuality - 8 (299): "...somehow when I read this, it brings me back to my Education courses whereby it says teaching procedure is...you must have a source, and you must have a recipient. So, it is only that way that learning occurs."

Content Knowledge = Elaborating - 9 (308): [There is no substitute for the sensitive, informed teacher who can investigate, hypothesize, and make quality decisions about how to respond to each child, how to select and use materials, and how to design effective class activities.] "So, this is where training comes in. You have to develop this skill in teachers who are sensitive to the pupils."

Content Knowledge = Agreeing - 3 (184): "Definitely, definitely. Because when you read something that is dry, and you are forced to do it, something which you don't like, definitely you cannot, you don't give your full understanding, or concentration, or attention to it."

Content Knowledge = Disagreeing - 4 (111): "I am sure not all New Zealand teachers are excellent teachers. It should be the same everywhere; some are good teachers, some are lousy teachers."

Content Knowledge = Generalizing - 3 (128): "Of course, they can do it. It is such a small country. And ya, learning by doing is something, you know,you learn more when you do things...like I, I do and I remember more."

Connecting Text to Local Situation - 5 (222): "That's what is lacking in our system; no faith in the teachers."

- 3 (273): "Well, we always have the exams to think about. No matter what we think is best, there is always a test waiting, the exams waiting, and the Headmaster will be waiting for the results!"

Text Structure Knowledge - 8 (175): "So, now we go to a new topic."

Inferencing based on Text Structure Knowledge - 2 (97): [I decided there are these possible explanations.] "I suppose it's for the failure of the Americans and the success of the New Zealanders."

Questioning based on Text Structure Knowledge - 2 (153): [In the introduction, the New Zealand teachers' guide states its assumptions.] "What could be the assumptions?"

Stating expectation based on Text Structure Knowledge - 1 (229): [Then what about whole language teachers in the United States? Who are the whole language teachers and who can be a whole language teacher?] "I don't know. Let's see."

Adding New Information - 1 (215): "What about parents? I think they shouldn't have any problem from them because they themselves have undergone such a process before."
(This participant has been to New Zealand and is familiar with the Educational system there).

(3). Making Personal Statements

Expressing Feeling of Sarcasm - 4(225): "As long as we can remember facts and mark A, B, C, that's just enough for us here. It's a very positive way of teaching and it makes everybody happy!"

Expressing Feeling of Bias - 5(273): "It is typical of the Americans being fed-up with being told what to do."

(4). Consolidating

Integrating - 1 (204): "So, earlier on in the paragraph above is on self-correction, and this one is teachers directing them and developing their ability to predict and confirm, and self-correct."

Summarizing - 8 (15): So here...Now I think I understand this whole thing. Again. You know, the student, the learner, the reader, must be at her own liberty to read, you know...without direct... direct instruction of the teacher. But the teacher must, at the same time, guide her, just guide her. So, I think I can use the word facilitator here. The teacher can act as a facili-

tator, not as a commander - just facilitate her reading, so that I think that will help her in finding the meaning to what she is reading ...comprehending the passage."

5.0.5. Number of Occurances for Each Category.

M O N I T O R I N G

PARTICIPANTS:	(Ken Goodman)						(G.S. Pinnell)			
	1	2	3	4	5	6	7	8	9	10
Questioning	7	6	11	12	27	19	2	4	16	2
Answering	3	0	3	0	1	1	1	1	0	1
Rereading	13	11	3	20	19	34	2	15	17	22
Inferencing	6	11	7	11	6	9	23	7	2	8
Hypothesizing	3	1	5	8	5	2	9	7	4	4
Confirming	5	1	1	0	0	1	2	2	2	9
Paraphrasing	23	6	4	2	27	4	49	56	63	41
Stating Intent	0	4	2	6	1	14	0	1	0	0
Stating Interest	0	0	0	1	0	1	0	0	0	0
Stating Expectation	0	0	0	0	0	0	0	1	0	0
Stating Failure to Understand	0	7	1	2	0	15	1	4	2	0
Stating Success in Understanding	2	5	0	1	2	17	0	12	7	0

S C H E M A T I C R E F E R E N C I N G

Inter- textuality	0	2	3	0	0	1	0	4	0	0
Personal Experience	11	18	30	17	5	11	0	6	0	3
Text Structure Knowledge	4	4	0	0	1	0	0	6	0	0
questioning:	0	1	0	0	0	0	0	0	0	0
Inferencing:	0	1	0	0	0	0	0	0	0	0
Elaborating:	0	0	0	0	0	0	0	0	1	0
Stating Expectation:	1	0	0	0	0	0	0	0	0	0
Content Knowledge	0	0	12	1	0	0	2	0	8	0
Agreeing:	11	13	14	14	10	25	1	5	0	8
Disagreeing:	1	3	1	7	0	2	0	2	0	0
Elaborating:	13	4	15	5	4	1	11	18	0	5
Generalizing:	1	0	1	0	0	0	0	0	0	0
Inferencing:	0	0	0	0	0	0	0	0	0	0
Adding New Information	2	1	2	0	2	0	1	0	2	0
Connecting Text to local Situation	9	10	9	17	5	1	0	7	0	0
Connecting Text to Intended Audience	9	5	14	3	4	1	1	3	0	2

M A K I N G P E R S O N A L S T A T E M E N T S										
Expressing Feeling of Sarcasm	0	0	0	3	0	0	0	0	0	0
Expressing Feeling of of Bias	0	0	0	0	1	0	0	0	0	0
C O N S O L I D A T I N G										
Summarizing Text	0	0	0	2	0	0	0	7	1	2
Integrating Text	5	3	1	0	2	0	0	0	0	3

5.0.6. Summary of Frequency of Use

Monitoring

	No. of Occurences	Percentage
Questioning	106	12.60%
Answering	11	1.34 %
Rereading	156	19.11
Inferencing	90	11.00%
Hypothesizing	48	5.87%
Confirming	23	2.81%
Paraphrasing	273	33.37%
Stating Intent	28	3.42%
Stating Interest	2	0.24%
Stating Expectation	1	0.12%
Stating Failure to Understand	32	3.91%
Stating Success in Understanding	46	5.62%
Total No. of Occurences	818	100%

Figure 8a: Cognitive Strategies Used

Schematic Reference

	No. of Occurences	Percentage
Intertextuality	10	02.18%
Background Experience	101	22.05%
Text Structure Knowledge	15	03.27%
-Questioning	1	00.22%
-Inferencing	1	00.22%
-Elaborating	1	00.22%
-Stated Expectation	1	00.22%
Content Knowledge	23	05.02%
-Agreeing	101	22.05%
-Disagreeing	16	03.49%
-Elaborating	76	16.59%
-Generalizing	2	00.44%
-Inferencing	0	00.00%
Adding New Information	10	02.18%
Connecting Text to Local Situation	58	12.66%
Connecting Text to Intended Audience	42	09.17%
<hr/>		
Total No. of Occurences	458	100%
<hr/>		

Making Personal Statements

	No. of Occurences	Percentage
Expressing Feeling of Sarcasm	3	75%
Expressing Feeling of Bias	1	25%
<hr/>		
Total no. of Occurences	4	100%
<hr/>		

Consolidating

	No. of Occurences	Percentage
Summarizing Text	12	46%
Integrating Text	14	54%
<hr/>		
Total no. of Occurences	26	100%
<hr/>		

Figure 8b: Metacognitive Strategies Used

Before making hypotheses based on what the data shows, a brief look at some theoretical perspectives should be of some help here. Nisbet and Shucksmith (1986) have hypothesized that strategies used in any form of learning can be subsumed under 'cognitive' and 'metacognitive.' **Cognitive strategies** are those which involve the active manipulation of the learning task itself; that is, through "rehearsal," or repeating of items that have been read, by grouping information in ways that will enhance comprehension and retention, and through elaborating and interconnecting new information from texts to information already stored in memory. Examples of these strategies are found under the Schematic Referencing and Consolidating categories.

Metacognitive strategies, on the other hand, are those which involve knowing about learning and controlling learning through planning, monitoring, and monitoring the learning activity. According to Nisbet and Shucksmith, **monitoring** has been described as the key process that distinguishes good learners from poor learners because good learners are constantly aware of the task demands and information content presented. Two other metacognitive strategies that support monitoring are **selective attention**, where readers focus on specific information anticipated in the message, and **directed attention**, where readers' focus is more on the task demands and text content. Metacognitive strategies are generally considered to

be applicable across a variety of tasks, whereas cognitive strategies may be more tailored to specific learning activities.

The importance of metacognitive and cognitive strategies can be seen in Tables 2(a) and 2(b). The tables indicate that maximum energy is placed by participants in this study on the metacognitive processes - 662 times - as compared to the cognitive processes - 488 times. This means that metacognitive processes occupy about 57% of processing time. From among the strategies under **Monitoring**, "Paraphrasing" seems to take top position, followed by "Questioning." Most of the questions asked, however, were never really intended to be answered directly. It is presumed that this strategy helps readers to focus attention on incoming chunks of information that are to be processed. It would also seem that "Questioning" is another form of information search from long-term memory (LTM), or a method where readers would generate "Hypotheses" and "Inferences" which could either be "Confirmed" or rejected as more information from text or from "Schematic References" are brought to be processed in working-memory (WM).

Consider participant No.8's processing technique to understand lines 76 to 95:

8 (77): "What does it mean by "little books?" Does it mean short passages, or the size of the books? OK, I am not very sure, but I understand it more if I just go on reading."

(Rereads lines 76 - 78, twice.)

- 8 (78): "Oh, it means it is a short passage then."
- 8 (80): "So, that means instead of just drill items, they are given a passage whereby it somehow relates to their experiences...they are familiar with that."
- 8 (83): "OK. They are familiar stories so that they will understand it better. So again, I think this has something to do with what they read and with what they know in their brain. Well, I guess, this guy Frank Smith was right when he was trying to relate all about background knowledge and what you read with the new schema. OK."

(Rereads lines 80 - 83.)

- 8 (83): "So, re-reading here they relate that to skill. So, besides having something that is familiar to the child, that is familiar to their background knowledge, the skill or drilling factor is also put in here; I think, re-reading familiar stories. That is, you relate your background knowledge. So, rereading is...is a drill. OK."
- 8 (91): "Oh, boy. I think this is a pretty long sentence and it will take...it is quite difficult to comprehend when it is very long like this. But, what I gather here is that, when the teacher gives the child something new to read, I mean besides the reading process, the teacher is also analyzing the behavior of the child when he or she is reading. So now, the teacher is studying the behavior."
- 8 (95): "What I understand here is that reading...reading strategies can't be measured directly so the observation of the behavioral aspect of the learner or the child is a great help for the teacher in this recovery...Reading Recovery, to find the responses of the child. As the child reads and his behavior is observed, that behavior will sort of show the teacher what the responses of the child are. OK."

From the protocols above, it would seem that when a reader wanted to assess a chunk of "textual unit" - that is, when a new set of information was to be processed, it

would, first of all, be used as a form of questioning, hypothesizing, and inferring - hypothetically as methods of retrieving related information from LTM, that is, triggering related "nodes" in the branching memory structure that would help her in her comprehension. The protocols used to carry out these actions were usually short and tentative. However, as more and more chunks of information were added into the reader's working memory, the protocols subsequently became more extensive. They no longer contained merely questions, hypotheses, or inferences, but also other related information retrieved from LTM by the reader to help make the unit understandable.

In participant No. 8's protocols for lines 77 and 80, her understanding of these chunks of information was obviously still not clear. However, as with other readers in her group, she held these chunks of information further in the working memory buffer and continued to add to them more information until understanding occurred. When that happened, the "meaning" understood would either be "paraphrased" into the reader's own words, or further embellished with information from LTM, then consolidated, and then stored in long-term memory. Then the whole cycle of taking in, mulling over, and embellishing new chunks of information began all over again.

In terms of processing time, the average time taken to read and to Think-Aloud for all participants was 24 minutes, which means that the processing time for both

cognitive and metacognitive processes was approximately .02 second. This is an interesting insight in terms of the working speed of the brain. But then again, considering the fact that participants would have also undertaken other processing tasks not indicated in their protocols, this .02 second processing time can only be taken as a rough estimate and the true processing time could have been lower than this.

As was observed through participants' protocols as they sifted through the text they were reading, monitoring of the various components was either inhibited or embellished by information from the Schematic Referencing, Making-Personal-Statements, and Elaborating components. According to Reder (1980), and Weinstein and Meyer (1986), Elaborating is a particularly significant strategy because of the benefits for comprehension and retention that have been demonstrated with its use. Furthermore, elaborative strategies may be considered a superordinate category for other strategies such as inferencing, transfer, deduction, imagery, and summarization (O'Malley, Chamot, and Walker, 1987). Thus, information that had been sieved, expanded, and elaborated seemed to have helped to enhance comprehension, and once this was achieved, the information was then consolidated by participants, perhaps under a specific semantic unit, and stored in LTM.

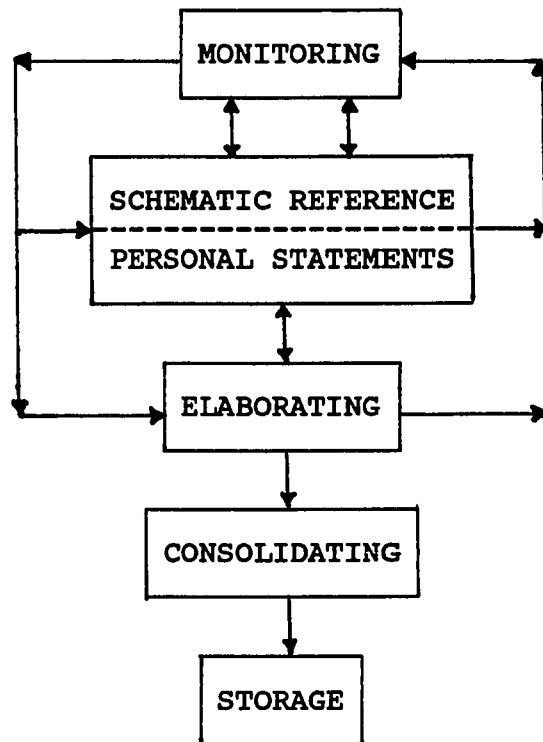


Figure 9: Pattern of Cognitive and Metacognitive Strategies Used in Reading Expository Texts

From the think-aloud protocols data collected, the components of Monitoring constitute the sieving apparatus. Whatever passes through it is in turn mulled over by the Schematic Referencing and Elaborating components, further enhanced, or not, by components in the Making Personal Statements, and then collected in the Consolidating hold before it is placed in the LTM storage unit.

5.0.7. Nature of Text Processing

A look at the various components under the different categories shows that to compartmentalize each category as a precise, distinct unit is impossible. The working memory does not seem to process information in a direct or linear manner but seems to hop back and forth in search of feedbacks from various memory repositories before deciding on what is to be stored in LTM. If the intake of information into WM is precise--that is, at the end of a phrase or sentence--its processing is far from it. This aspect of WM is also hypothesized in Baddeley's (1982) working memory system. Based on his model, initiation of the reading process will first be carried out by the Executive Control System, where the reader will take in a certain amount of "meaningful" textual unit into the Rehearsal Loop (RL). Within this short-term buffer, selected information will be processed, embellished whenever possible with related items recalled from LTM. This embellishment can only take place depending on how familiar the reader is with the topic, text structure, and author's biases.

The "selection" that Baddeley alludes to is apparent in participants' choice of reading "pauses." Although places where participants were to stop and think out loud were marked for the first few sentences of the articles concerned, a few of them did not adhere to these marked spots but would stop at places they chose themselves. The

kind and amount of "meaningful units" to be processed seemed to differ from one reader to the next. In this respect, then, allowing participants to make their own decision on where to stop to think-aloud in the later part of the reading task was well motivated.

5.0.8. The Semantic and Episodic Components in Working Memory

Within this working memory system, two other memory components also have direct implications for its processing capability: the semantic and episodic memory (Tulving, 1985). As has already been described in Chapter 2, by **semantic** memory, Tulving means the kind of world knowledge, including knowledge of language, that a person has. Semantic memory is also conceived to be the all encompassing, permanent storehouse of generic information that is typically similar across individuals that share and belong to the same culture and society. **Episodic** memory, on the other hand, is a 'personalized' kind of reservoir, full of information which is particular to the individual only. So, for example, if the concept of "school" or "learning" is common to everyone at the semantic level, it will be specific to the individual at the episodic memory level. According to Tulving, however, these two forms of knowledge are not separate, compartmentalized structures but are in an interactive and interdependent relationship. Semantic knowledge, according to him, is derived from

episodic memory by a process of abstraction and generalization. Episodic memories are interpreted and classified in terms of general semantic knowledge in the form of schemas and scripts.

With regard to the study proper, the retrieval of semantic memory by the ten Malaysian participants was quite "automatic" - i.e. they did not encounter words or phrases which took a lot of energy to decipher. Thus, although the two articles selected were relatively long (1,797 and 2,124 words, respectively), the average time taken to complete their reading (with pauses for thinking aloud) was 24 minutes. At the episodic level, the same holds true for both passages except for two short phrases in Gay Su Pinnell's article which talks of "strategies on-the-run" (line 241), and "a one-way glass" (line 182). Of the four participants who chose to read this article, three seemed to have some difficulties in understanding the former and one, the latter; and yet, as separate entities, the words that make up these phrases are simple enough at the semantic level.

However, as these phrases were read as part of the superordinate proposition of the text structure (to be discussed further in Chapter V), considerable energy was used to try to grasp their meaning in the context of their appearance in the article. The same cannot be said about words such as "yuppie", or "deja vu" which appear in the first two opening paragraphs in Kenneth Goodman's article.

Participants questioningly repeated these words and "having decided" that they were not pertinent to the general content of the text per se, ignored them and continued with their reading.

In this regard, participants' protocols have again managed to point to the importance of the concepts of **monitoring** (Baddeley, 1982) and **cognitive economy** (Quillian, 1969) which have already been addressed in Chapter III (p.37).

Based on the theoretical perspectives given so far, the readers in this study (who can be hypothesized as competent readers) would then be monitoring their intake and comprehension of particular texts read and omitting redundancy wherever necessary. This inference, however, can only be verified by data in the (oral) Retelling protocols that will be dealt with in the next chapter.

5.0.9. Recursivity In Reading

From what has been observed in this study's set of protocols, the strategic reading processes posited for in Baddeley's WM are somewhat akin to the cognitive reading processes taking place in Harste's (1989) Reader-Text Transaction Cycle (RTTC) where he postulates that readers employ a variety of processes recursively, in a cyclical manner, controlled by on-going meaning-making demands. (Refer to page 35 in Chapter III for Baddeley's (1982) Working Memory model).

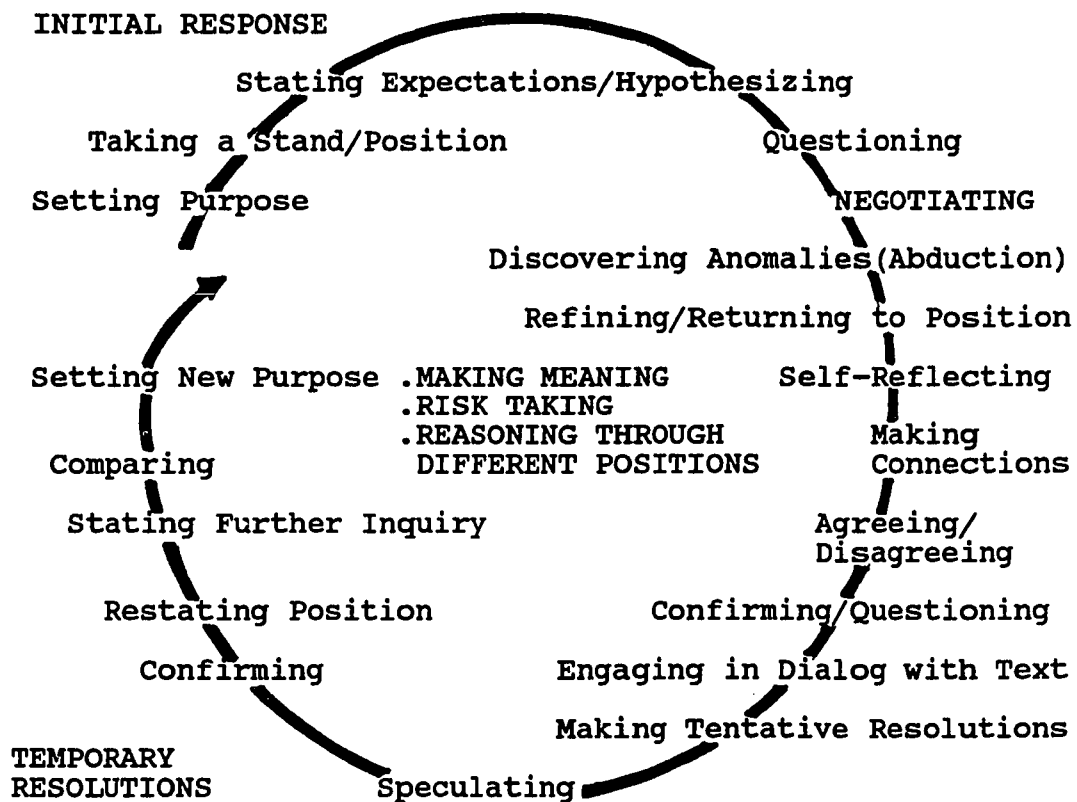


Figure 10: Reader-Text Transaction Cycle
(Harste, 1989)

5.1.0. How Is the Reader-Text Transaction Cycle Related to Baddeley's Theory on Information Processing?

Looking at both the RTTC and the model of the working memory, it becomes evident that it is within Baddeley's WM (or buffer zone) that a lot of what is hypothesized happening within the RTTC is taking place. The various steps of reader's taking a stance, negotiat-

ing, making connections, agreeing/disagreeing, making tentative resolutions, stating further inquiry, etc. happen recursively and are similar to what is happening in Baddeley's WM. As soon as the reader starts setting a new purpose for either reading the same chunk or a new set of information, the whole cycle starts all over again.

Thus, based on the data found in this study, the various stages of reading can be hypothesized as taking the following cycle:

- (a) **Going into the text** - i.e. the stage at which the reader goes into a portion of the text, and at which time she is theoretically beginning to "monitor" it in working memory. This is also where she is hypothesized to be doing the various strategies of setting a purpose, questioning, and negotiating.
- (b) **Within the text** - i.e. the stage where the selected chunk of text to be processed is being heavily scrutinized via processes of "monitoring," where the reader "makes connections," "agree" or "disagree," etc. This is also where she calls in information from the various repositories of "schematic referencing," "elaborating," and "consolidating" - a place where a heavy dialogue with text is hypothesized to be taking place.
- (c) **Leaving the text** - i.e. the point where transaction is hypothetically completed, at least for the

moment, where a tentative resolution is made, and the reader is now ready to begin the process of "going into the text" again.

This Reading Cycle (RC) is similar to Harste's (1989) idea of the Reader-Text Transaction Cycle (RTTC), the difference being that the RTTC describes the reading act in general whereas the reading cycle posited here (i.e. entering, being within, and leaving text) are part of the many cycles that are formed until the reading task is completed.

This RC and the explanations given before have been able to help answer the research questions posed at the end of Chapter III. That is, participants did make use of their knowledge of textual structure to help them understand text content. This was evidenced through the various strategies that they used in Monitoring. There were also 156 incidences of "rereading" (19.11%) indicating that it was one of the most important strategies (besides "questioning" and "paraphrasing"--16% and 41.23% respectively) that had helped them clarify information which was not clearly understood. And participants also demonstrated a high use of strategies in the "Schematic Reference" to help them understand and tie new information with what they already know. (Refer to the research questions below.)

1. What kind of strategies do participants bring to the reading tasks?
 - (a) Do participants make use of the logical structure of the text to aid in comprehension?
 - (b) Do participants demonstrate evidence of planning the next move in the reading process?
 - (c) Do participants re-read to clarify the message?
 - (d) Do participants consult other sources to help clarify problems?
 - (e) Do participants activate their prior knowledge to aid in comprehension?
 - (f) Do participants check the outcome of their attempt to solve a problem ?

5.1.1. The Importance of Rehearsal and Monitoring In Reading and Remembering

The role of the WM, therefore, is central to reading comprehension, but sometimes due to task difficulty, reading processes become de-automated. Baddeley and Hitch (1974) suggest that de-automation is the result of cognitive resource overload. When de-automation occurs, the expert readers need to concentrate on their "executive management" skills which include monitoring the quality of information in working memory and monitoring the comprehension of input so that things are proceeding smoothly.

In this study, participants' involvement in "monitoring" was quite extensive. They monitored their reading behaviors, the length of components to be assessed, their level of comprehensibility, the importance of these units of information to the reading task, strategies to use to enhance remembering, etc. Monitoring, in fact, began as soon as each of them was introduced to the authors. Their articles were given a cursory look and decisions on what to read were based on such reasons as "interest in the topic," "knowledge of the author," that "the article looks interesting," or "the prints are easy to read." Then once they entered the text, they needed a more concerted effort to understand its content. As de Beaugrande (1980) has observed, a dialogue between reader and author then ensued. Questions like "What do you mean by that?," "You mean...?" are found in abundance in this set of participants' think-aloud protocols. And the "click of comprehension" alluded to by Brown (1958)--when suddenly what was vague becomes clear "Oh, you mean...!," "I understand that"--are expressed.

It has been hypothesized (Flavell and Wellman, 1977) that adults are fairly proficient at generating strategies for remembering, at developing methods to "rehearse" material they realize will be hard to learn. Their metamemory processes include the awareness that things do not merely "get into" memory, readers must "get them in" by performing some intentional activity. According to

Craig and Lockhart (1972), rehearsal can be divided into two major kinds; namely "maintenance rehearsal," (a low-level, repetitive kind of information recycling) and "elaborative rehearsal," (a complex kind of rehearsal that uses the meaning of the information to help store and remember). Each of them will have different effects on storage. According to Craig and Lockhart also, when information is subjected to elaborative rehearsal, the information is stored more deeply in the memory system. As a consequence, material that is rehearsed elaboratively should be more permanently available for retrieval from memory - in short, it should be remembered better. This is an important concept because it has certain implications for the recall of information on the part of this study's set of readers. This aspect of recalling will be discussed in the next chapter under the topic 'Retelling.'

CHAPTER VI

6.0.0. **Retelling Analysis (Immediate Recall)**

van Dijk (1979) has postulated that in a lot of instances, what readers perceive as important when they construct meaning from text is what writers have given prominence in the text.

6.0.1. Taping Procedure

This part of the study required participants to do an oral Retelling of what they had read while they were doing their Think-Aloud (T-A) task. As soon as T-A was completed, each participant met with the researcher in the recording laboratory and was asked to read the passage quietly once again, to underline words or sentences, and to jot down any kind of notes she desired on the article itself. However, she was also told that after her reading time was over (fifteen minutes) she would not be allowed to refer to the article nor to the notes she had made. The Retelling, therefore, would be based on whatever the participant remembered from that reading alone. Also included in this Retelling task was the written aspect of the Retelling. Once her reading time was up, the participant was asked to write in note form the information she would orally Retell to the researcher. The time

allowed for this activity was five minutes. (The Retelling instruction is given in Appendix D.)

Initially, the written note was used as a way to assist the participant in making her Retelling easier. However, it later turned out that the written information could be utilized as a means of checking superordinate correlates between those given by participants and those presented in the texts.

When this part of the task was done, the participant would signal the researcher that she was ready to Retell (orally). From this point onwards, the researcher would sit with the participant in the recording booth and be the listener as the participant performed her Retelling. Each participant would Retell without any interruption from the researcher--any questioning being done only after the participant had completed her Retelling task. (A sample of a participant's Retelling is given in Appendix G.)

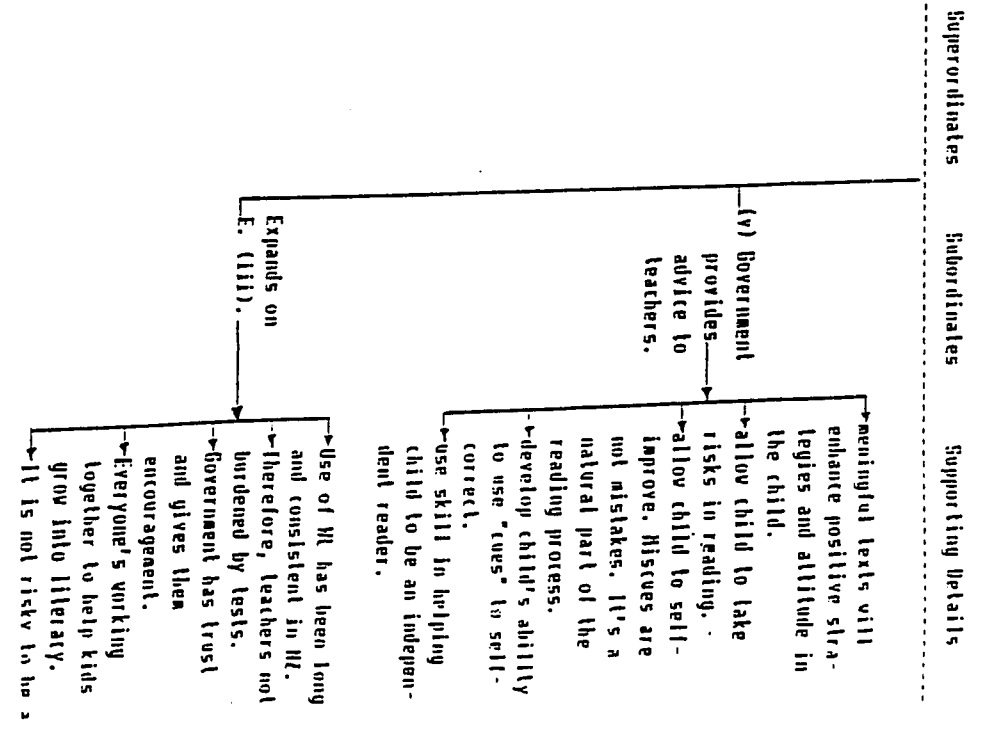
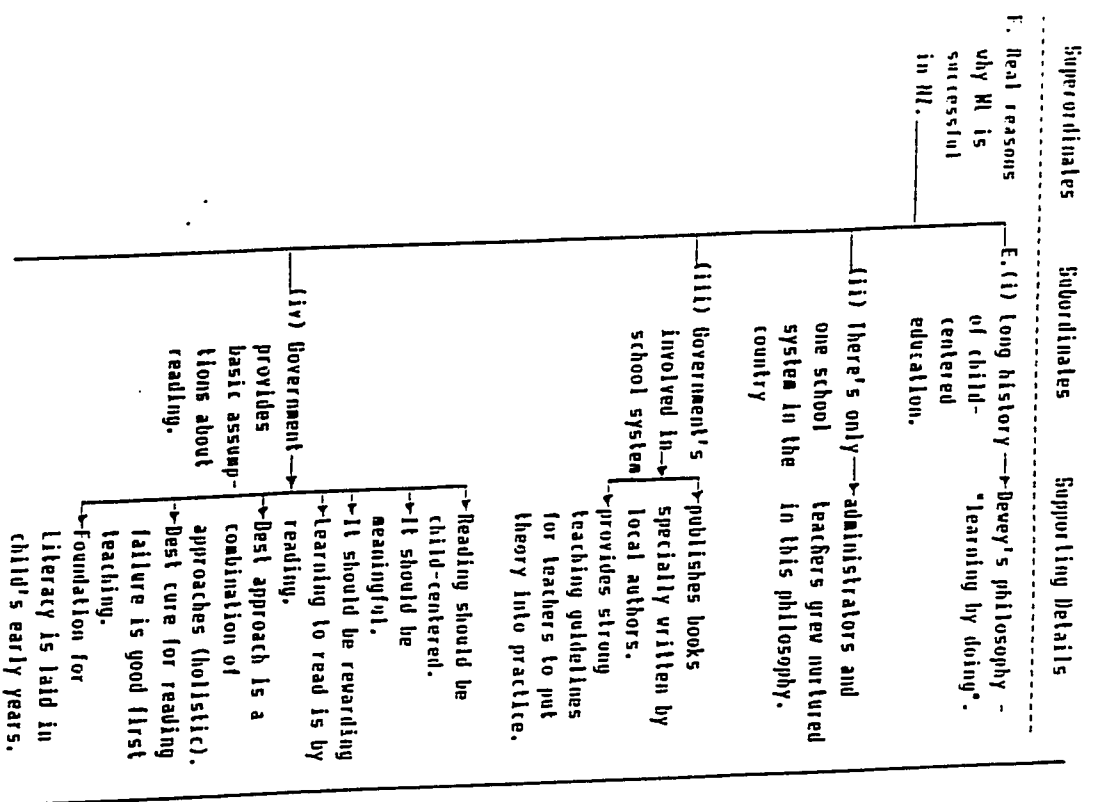
6.0.2. Method of Analysis

The tapes with the Retelling protocols were transcribed verbatim. They were marked to tally with the number already assigned to each participant when they did their T-A task. The transcribed protocols were then matched with the pre-Retelling written notes.

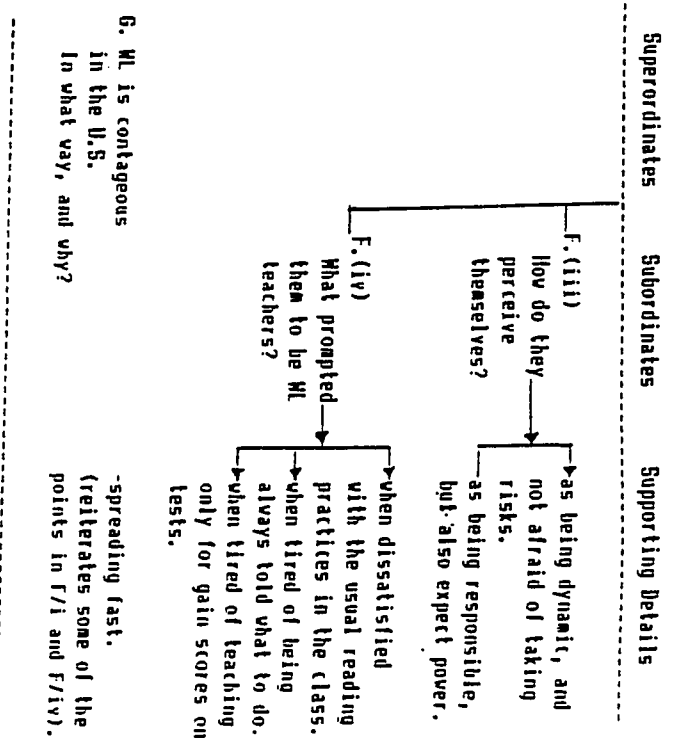
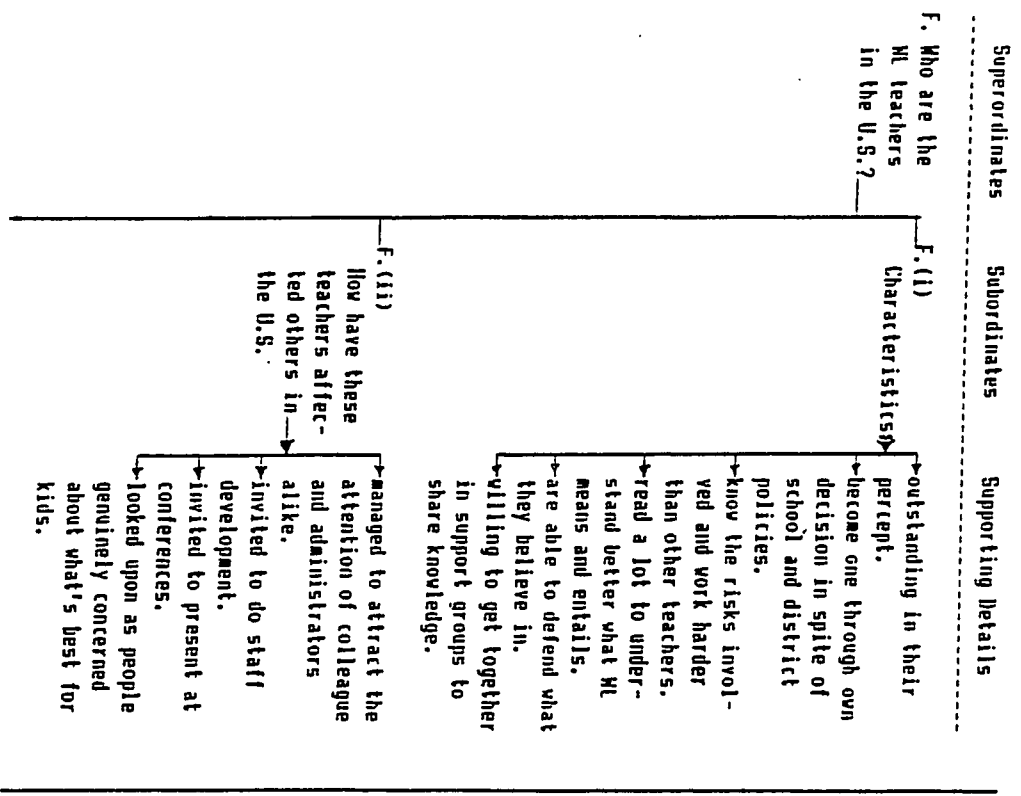
Next, each transcription was read once to check for clarity and coherence by the researcher and two other readers. Then the task of checking for superordinates,

subordinates, and supporting details began. The analysis for the different categories was based on guidelines given in Meyer's (1982) text structure analysis. That is, for each new idea given in the text, the superordinate (main idea) status would be assigned. Other information that was found that helped to expand on these main idea components was assigned the subordinate status. Other information that helped to elaborate on the subordinates was in turn called supporting details.

Initially, the inter-rater reliability for this task was 89%, the disagreement being the placement of textual information under either the superordinate or subordinate status in the Pinnell article. The disagreement was later resolved when it was decided that although the component (refer to subordinate Biv) seemed to lean slightly to the superordinate status, it was more logical to place it in the subordinate status. After this revision, the inter-rater reliability rose to 96% and each rater agreed on the following text structures for the two articles read for this study.



(Continued next page)



-spreading fast.
 (reiterates some of the points in F/i and F/iv).

Text Structure Components/Underlying Logic and Message:
for:

Gay Su Pinnell's: "Holistic Ways to Help Children at Risk of Failure."
(2,124 words)

Superordinates Subordinates Supporting Details

A. Clay and Goodman's concern about independent reading among children.

- A.(1) To look seriously at children's reading behavior.
- (i) To understand what errors "in the head" mean.
- (ii) To question if children can be independent readers.
- (iv) To question if children at risk of reading failure can be helped.

B. Success story of the Ohio Reading Recovery Program (ORRP) enumerated.

- D.(i) Two-thirds of the students reached desired reading level.
- (ii) They continue to make progress without further intervention from ORRP.
- (iii) Average progress is maintained after two years of being "released" from ORRP.
- (iv) ORRP result seems to replicate success in the RT Reading Recovery Program.

Superordinates

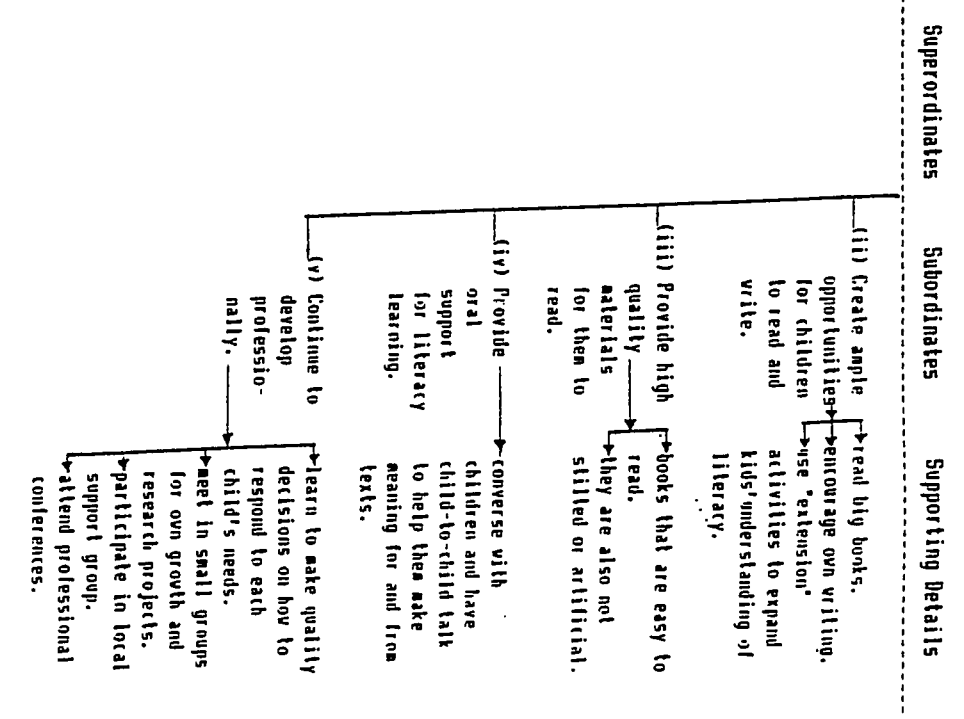
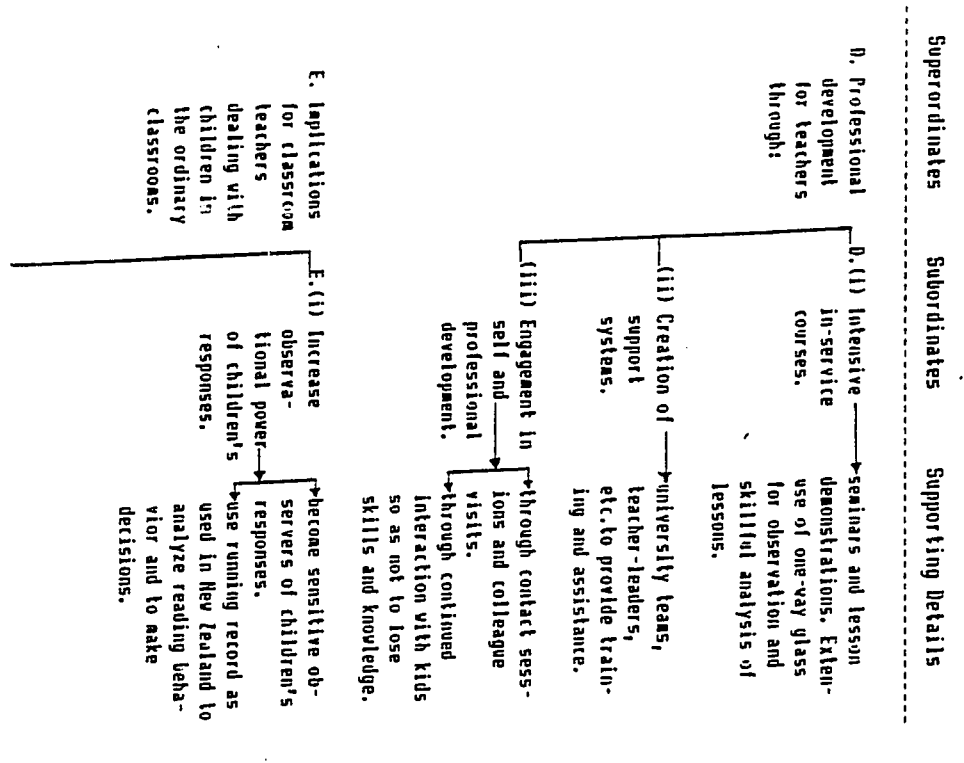
Subordinates

Supporting Details

C. The ORRP's emphasis is on helping children become independent readers. How?

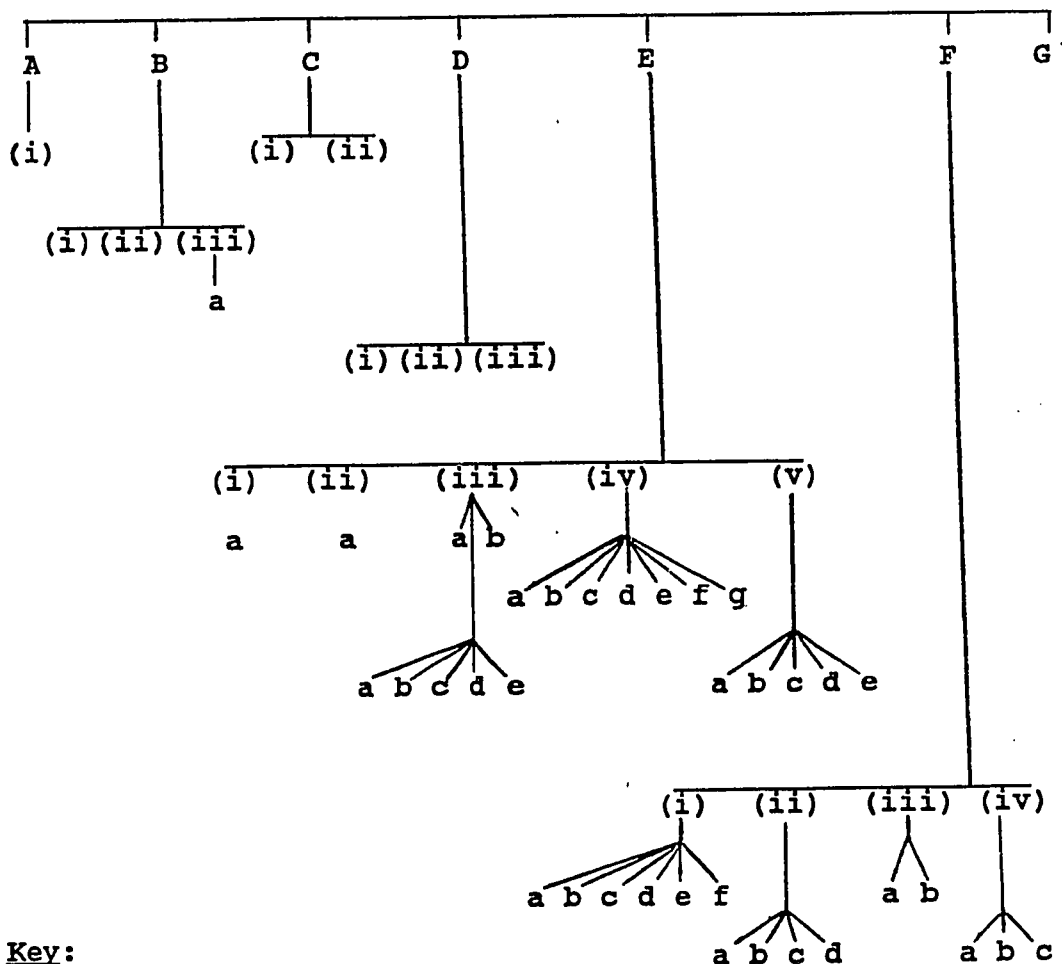
- (i) To understand the concept that children learn to read by reading.
- (ii) To stress that →elaborations: read meaning, messages, and meaningful experiences with written language.
- (iii) Teachers be trained to help develop →teachers take running record of kids' reading. →teachers analyze reading behavior. →teachers make hypotheses about strategies used by their kids. →teachers support this process.
- (iv) Lessons to include →collaborative writing.
- (v) Teachers to provide strong scaffolding to help children understand concept of literacy. →provide numerous teacher-child oral interaction.
- (vi) Teachers →use of "mistakes" as a way of understanding child's search for meaning in written language.

(Continued next page)



In order to see the match between participants' Retellings and the information given in the texts, a simple text-tree structure for each of the two articles (with their respective superordinates, subordinates and supporting details) was made. (Refer to the diagrams below.)

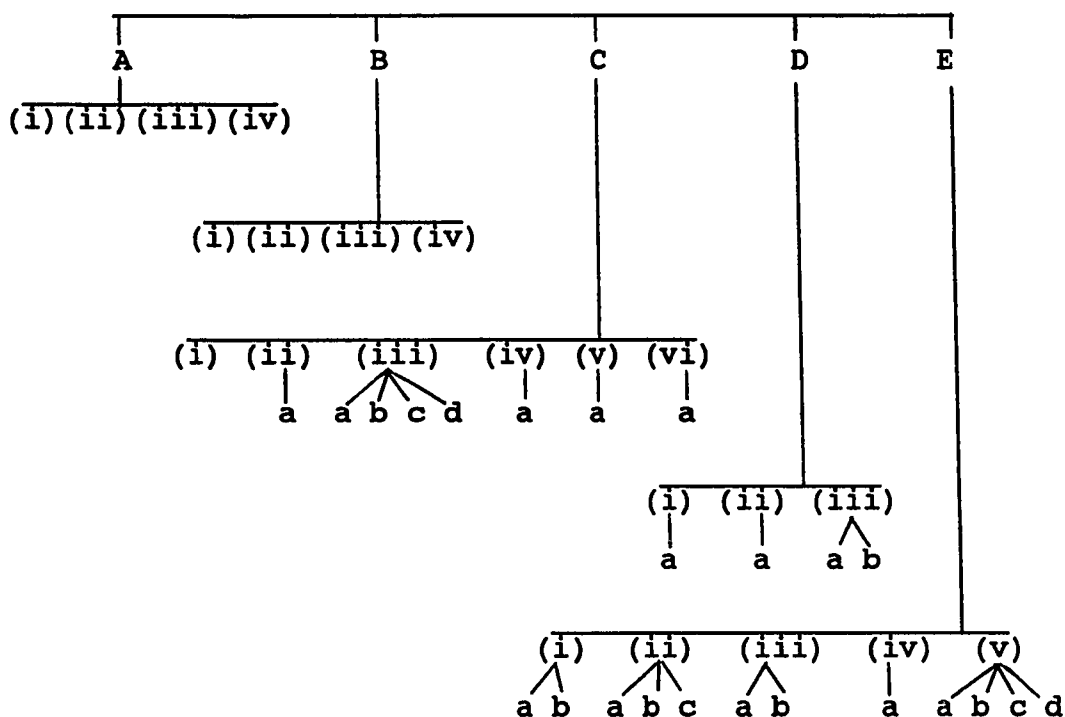
"Who Can Be a Whole Language Teacher?"
(by Kenneth Goodman)



Key:
 A, B, C, etc. - Superordinates
 (i), (ii), etc. - Subordinates
 a, b, c, etc. - Supporting Details

Figure 11: Text-Tree Structure for the Goodman Article.

"Holistic Ways to Help Children at Risk of Failure"
 (by Gay Sue Pinnell)



Key:

- A, B, C, etc. - Superordinates
- (i), (ii), etc. - Subordinates
- a, b, c, etc. - Supporting Details

Figure 12: Text-Tree Structure for the Pinnell Article

6.0.5. Styles of Retelling

The following is a tabulation of the different styles of Retelling used by participants. Oral paragraphing is deduced (inter-rater reliability 98%) through long pauses and change in tone of voice in the tapes heard. This paragraphing is indicated below through the use of new paragraph breaks for each group of Superordinates and/or Subordinates used.

Participants' Retellings can be read as follows. Small letters within parentheses indicate personal remarks. For example, (mis) indicates that a participant had made a synthesis of certain information as her "main idea statement," and (h) indicates that the participant is making a "hypothesis" based on what she had read. (The key to reading these letters within parentheses is given below.) All other letters will be in upper case and indicate information which participants had taken from the texts themselves and used in their Retellings.

6.0.6. Key to Reading Styles of Retelling

- (mis): Main Idea Statement.
- (pp): Personal Perspective. (pp) could also indicate readers' own background knowledge.
- (pe): Personal Experience. (pe) will basically indicate real life or classroom experiences.
- (p): Paraphrasing.
- (h): Hypothesizing.

(Participants No.1-6 read the Goodman article and participants No.7-10 read the Pinnell article).

Participant No.1

- (mis)/A/E/Eiv/v. Using (mis) to indicate that the passage is about WL. Then a brief statement on A followed by E (its success in NZ) and Eiv and Ev (as "guidelines" given to teachers who wish to follow the WL teaching approach.
- A/Ai. Restating and expanding on these two points based on information given in the text.
- B/Bi/ii/iii. Restating (with minor elaborations from C/Ci/E. text. Restating C and Ci. Then using a summary statement of E.
- Ei/ii/iii/iv/v. Restating, and expanding by using selected elaborations given in the text.
- A/F/Fi/ii/iii/iv/(pp/pe). Restating, and expanding by using selected elaborations given in the text. Using (pp) to indicate that anyone can be a WL teacher as long as one is prepared to work hard, gets the co-operation of the "people upstairs;" meaning the administrators. Ending text by bringing in (pe): what she did as a teacher before - i.e. to let the headmaster know that she was not going to follow the school syllabus, and that she would do what she thought was best for her students.

Participant No.2:

- (p)A/Fiv. Using a brief (p) of A - i.e. increased popularity of WL in America and briefly relegating the failure of U.S. teachers to them not having (Fiv) control of their classrooms.
- Fiv/Ci. Reiterating (Fiv) and restating.
- E/Ei/ii/iii. Restating. In opposition to what has been stated of the situation in the U.S., NZ, on the other hand, has many positive traits that make WL a great success. Restating certain elaborations given in the text.
- Eiv/v. Restating an elaboration present in both subordinates: "meaningful text," and another elaboration in Ev: "miscues" should not be treated as mistakes.
- Fiv/i/ii/iii. Restating selected elaborations given in the text. (These restatements did not necessarily follow a linear order, and certain elaborations from each of the subordinates given may appear more than once).

Participant No.3

- (mis)/(pp)/E/
(pe). Using (mis) to indicate that the passage is about WL in the U.S. Bringing in (pp) to hypothesize that the size of the country has something to do with WL not being wide-spread although - E- it is very successful in New Zealand. Again using (pe) to indicate surprise that NZ (and not America) is the most literate country in the world.
- (h)/(pp). Elaborating by (h) to answer the surprise indicated in paragraph one above. Using (pp) about America having diverse language and cultural groups for which WL will be difficult to implement.
- (pp)/Eii/Eiii. Using (pp) and Eii to further argue why WL does not work well in the U.S. This is then substantiated by the inclusion of Eiii - that unlike the American teachers, the New Zealanders have governmental support and control over what they feel they should do for the good of their students.
- B/Bii/Fi/Fiii. Introducing B and Bi to stress why the need for development and change in the attitudes of American teachers. This is then elaborated by certain selected elaborations in both Fi and Fii - the mental make-up of those teachers who have decided to adopt WL despite the school system they are chained to.
- Eiv/v/(pe). Using some components in Eiv to stress what reading should be to children. This is then elaborated by the "miscue" component in Ev followed by (pe) to end Retelling.

Participant No.4

- (mis). A two-line (mis) to say that the passage is about WL, and the importance of reading to learning.
- (p)EF/(p)Ei,ii,
Eiii. Using (p) for superordinates E and F to compare the teaching situations in NZ and the U.S. This is substantiated by a (p) of Ei, and Eii, and selected components from Eiii (namely government support and its faith in its teachers).
- Eiv/v/(pp). This is then followed by the use of some elaborations in Eiv and Ev added by (pp) about how important it is to start children with "meaningful" reading materials.

- (mis)/Ev/(pp). Reiterating (mis) in paragraph one - i.e. the importance of reading to learning. Followed by one particular elaboration in Ev - "miscues" - that this particular skill should by (pp) be taught to children at a young age so that they can be independent readers.
- Fi. Introducing Fi and using almost all the information in the elaborating details given in the text.

Participant No.5

- (mis)/(p)B/
(p)Biii/i. Using (mis) that the passage is about WL and what makes a WL teacher. This is then followed by a (p) of B and a (p) of Biii and Bi.
- (p)E/(p)Ci,ii. Using a (p) of E; why WL is successful in NZ. Then changing this trend to using a (p) of Ci and Cii instead in this paragraph.
- D/Di/ii/iii/. Starting paragraph with a mention of D and the three hypotheses given in the text.
- Ei/iii/iv/v. Using Ei as an opening reason why WL works in NZ, followed by selected elaborations from Eiii, Eiv, and Ev - "miscues."
- (p)AG/Fiv/Fi/
Fii. Using a short (p) of A - why interest in WL has caught on in America. This is followed by a particular elaboration in Fiv: "fed-up with being told what to do" and other selected elaborating details from Fi and Fii.

Participant No.6

- (mis)/(h)(pp)/
(p)A,Ai. Using (mis) that the passage is about WL. Hypothesizing what WL means, and using (pp) to inform readers of own understanding of a "holistic" method that she has studied - i.e. "everything together; reading speaking, writing, everything." Continuing with a (p) of A and Ai though "I have never heard of it."
- C/(p)Di-iii/
(pp). Quoting a phrase in C - New Zealand, the most literate country in the world. Then using a (p) of all the supporting details in D as reasons why this is so. A (pp) is then added to express disbelief in D, but that the phrase, however, "made me quite interested."
- Eii/(pp)/iii/i. Then using Eii and its elaboration to start the paragraph. This is further expanded by (pp) linking the system of education in NZ to that in Malaysia.

Contrasting it to the one available in Australia and America. Thus, using Eiii to consolidate the reason why WL works in NZ because, Ei, that is the system they grew up with - i.e. "holistic."

C/(pp)Eiii/
Fi(pp)/Fiv. Reiterating phrase in C and restating Eiii with a (pp) - how important it is for teachers to have the backing of authorities. Then using a supporting detail in Fi - WL teachers are "outstanding," which at first was an amusing remark because (pp) how can one gauge someone being that. Later remarked that there was something to that component in Fi after reading more about what U.S. teachers have to do if they insist on using WL teaching methodology. Thus, the inclusion of other elaborations in Fi and Fiv.

(p)E/Eiv(pp)/
Ev(pp). Using a (p) of E to start the paragraph - what reading is all about. Expanding this with selected elaborating details from Eiv, and also using a (pp) - understanding of "schema" to expand the point further. Then using a particular elaborating detail - "miscues" in Ev to continue with the Retelling. Expanding it with a (pp) that "taking risks" is "... something we have learned before...about Frank Smith--take risks and things like that."

Eiv/v. Reiterating a particular elaborating detail present in both Eiv and Ev - meaningful texts - and other elaborations in Eiv; mainly that reading should be interesting and rewarding, to finish Retelling.

Participant No.7

(mis)Aiv/B/iv/
ii/iii. Stating (mis); i.e. - "...how children at risk of reading failure can be helped." - to open oral text. Then using B as an answer to that rhetorical question. Followed by Biv (the success of a similar reading program carried out in NZ) and Bii and Biii to substantiate the claim made in B.

C/(p)iii/v/iv/
ii. Using C to explain what the program does to carry out its objectives. Thus, inclusion of certain information from the supporting details in Biii,v,iv, and Bii - especially concepts about "meaningful reading," "developing reading strategies," "collaborative writing," and

- "individual teacher-child interaction."
 D/(p)ii/i/ Bringing in D to qualify statement that
 (p)iii. since "The teacher is an integral part of
 the whole program" then professional
 training should be provided. Including a
 (p) of Dii and a particular component of
 this subordinate - i.e. the "one-way
 glass" method of learning how to imple-
 ment the holistic technique of reading
 conducted in Di. Followed by a (p) of
 Diii - an "internship [which means that]
 they have to practice what they have
 learnt...with students."
- (p)E/(pp)/(p)Ei/ Using a (p) of E - "you cannot apply the
 ii/iii/iv/v. program to every child because not every
 child needs it." Followed by a (pp) -
 that "[It] is not a good technique
 ...because you cannot really afford to
 spend one-to-one (teacher-child relation-
 ship)." Continuing with a (p) of Ei-v in
 the form of "[The] five principles which
 you can use in dealing with young chil-
 dren in the class." Enumerating, through
 (p), certain selected components from
 elaborating details - i.e. "to improve
 observational power," "provide ample
 opportunities for the child to read,"
 "the opportunity to write (...to involve
 their own thinking, see?)," "to provide
 them with suitable reading material," and
 "[the teacher] must be a complete profes-
 sional...to improve her own techniques,
 her own abilities. Then only can she help
 children improve themselves."

Participant No.8

- (mis)/(p)A/i/ii. Stating the (mis) which is a (p) of A -
 "to help young readers...find their own
 self-motivated system of reading."
 Elaborating this with Ai and Aii -child-
 ren's reading behavior and what "errors
 in the head" mean.
- (p)B/Civ/Eiii/ Using a (p) of B - "she creates the rea-
 iv. ding recovery program" - as an answer as
 to how this help (mentioned above) can be
 carried out. Then elaborating it with a
 (p) of Civ (one-to-one contact), Eiii
 (selecting materials appropriate for the
 learners), and Eiv (supporting the
 students orally).
- Di/ii. Using Di to discuss what reading teachers
 do to better equip themselves for the
 technique they are adopting - "one-way
 mirror" to gain feed-back for better

understanding. Followed by a brief mention of Dii; the creation of a support group - the teacher leaders. Using a (p) of C; application of the program to the learners - and what they gain from it. Including Ciii; that they will better comprehend what they read "...and that this will motivate them to go on reading," an elaborating detail from Cv; "the learners learn to use the language as the teacher is there to communicate with them," Cii/iv; "They can use the language in the written form as support to what they read and that they do it orally with the teacher," and Eiii; "the learner [also has an opportunity] to read widely because the teachers do select a variety of articles and book for [them] to read."

(p)E/Ei(pp)/Di/(p)Bi/B. Using a (p) of E; "So, the last part of the article talks about the implication on the classroom teachers themselves." Followed by Ei and a (pp) of it - i.e. "[improving their observational power] is very important in the development of the learners. Only then can we monitor their success." Then elaborating on Di (as another method of improving themselves); "...in-service courses, in a way, help them to progress: get new ideas, do new things, learn new things." Stressing the need of new ideas instead of merely using "just drills, drills," so that "readers who didn't read as well as their peers" can be helped. Thus, (p)B/Bi the success of the Ohio Reading program "in helping them read better."

Participant No.9

(mis)A/ii/iii/iv. Using (mis); that the "whole article cusses mainly this Reading Recovery project." Stating that Aii/iii/Aiv are some of the issues mentioned asked by Clay and Goodman, and that the answer to the last two issues are "yes."

Aiii/(p)Ci/(p)B/i/iii/iv. Reiterating Aiii and adding a (pp) of Ci - Frank Smith who stated that learning to read can only be done through reading. Using B to introduce the reading program which enabled (p)Bi/iii/iv.

C/iii/(p)i/iv/ii/(pp)/Cv. Using a short statement about C to say what it does; i.e. Ciii/, a (p) of Ci (a lot of reading is done), Civ/ii. This is further elaborated by a (pp) "I remember

- reading something about this - (a reinforcement)." Then using Cv and elaborating on the concept of "talking about something [that has been read]...helps in the reading strategies later."
- D/Di/Ei/v/iii (pp). Using D why the need for it; "not everybody can handle it." Including Di and elaborating it with "training...through a one-way glass...to give [teachers] practical [experience]... to be able to observe." Followed by an elaborating detail in Ei/v to expand on the ability to observe not only to improve on students' reading strategies but also on their individual needs. Change in students' behavior will also have "something to do with the choice of materials." Using a (pp) to expand on this percept - "Sometimes you write materials...to include structures [that will help] in developing reading strategies."
- Ev. Concluding by using Ev and elaborating on it. "I think you must keep abreast [of things] and...you must be contact with this program."

Participant No.10

- (mis)/B/iv/Aiii/iv. Using (mis) to say that the article is about the Reading Recovery program in B. Stating success of program not only in Ohio but also in New Zealand (Biv). Using Aiii/iv as means of stating what the program stresses on.
- Cii/iii. Using Cii - that the program emphasizes on "meaningful reading," and Ciii plus an elaborating detail from Ciii - that teachers "record the reading behavior [which] helps the children to read independently."
- Cii/iv(pp) Reiterating Cii and expanding it with the statement that "these stories that they write are used for later reading." Adding Civ to help substantiate Cii that students be encouraged to work "collaboratively." Elaborating this with a (pp) - "I think for language purposes...they write familiar stories like Snow White and all that."
- Eii/iii/iv. Using Eii/iii to emphasize the need for ample opportunities for students to read the variety of books which should be at their disposal. This is followed by using Eiv that "[t]eachers should interact with

D/i/ii. the child for oral language support." Briefly stating D - professional development of teachers - which is expanded through the use of Di/ii, emphasis being on an elaborating detail in Di - the use of teaching demonstrations (in a "one-way glass room") for purposes of group discussions.

6.0.7. Information included in participants' Retelling

Kenneth Goodman: "Who Can Be a Whole Language Teacher?"

Emerging Superordinates and Subordinates in RETELLINGS						
	A(i)	B(i-iii)	C(i-ii)	D(i-iii)	E(i-v)	F(i-iv) G
1.	A(i)	B(i-iii)	C(i)		E(i-v)	F(i-iv)
2.	A		(i)		E(i-v)	F(i-iv)
3.	A	B(Bii)			E(ii-v)	(i/iii)
4.	A				E(i-v)	F(i)
5.	A	B(i/iii)	C(i/ii)	D(i-iii)	E(i/iii-v)	(i/ii/iv) G
6.	A(i)		C	D(i-iii)	E(i-v)	(i/iv)

Gay Sue Pinnell: "Holistic Ways to Help Children At Risk of Failure."

Emerging Superordinates and Subordinates in RETELLINGS				
	A(i-iv)	B(i-iv)	C(i-vi)	D(i-iii) E(i-v)
7.	(iv)	B(ii-iv)	C(ii-v)	D(i-iii) E(i-v)
8.	A(i-ii)	B(i)	C(ii-v)	(i-ii) E(i/iii)
9.	A(ii-iv)	B(i/iii/iv)	C(i-v)	D(i) E(i/iii/v)
10.	(iii-iv)	B(iv)	(ii-iv)	D(i-ii) (ii-iv)

6.0.8. Content and Styles of Retelling

K. Goodman: "Who Can Be a Whole Language Teacher?"
(1,797 words)

Participant No.1

-(mis)/A/E/Eiv/Ev
-A/Ai
-B/Bi/Bii/Biii/C/Ci/E
-Ei/Eii/Eiii/Eiv/Ev
-A/F/Fi/Fii/Fiii/Fiv

Participant No.2

-A/Fiv
-Fiv/Ci/E/Ei/Eii/Eiii
-Eiv/Ev
-Fiv/Fi/Fii/Fiii

Participant No.3

-(mis)/E
-Eii/Eiii
-B/Bii/Fi/Fiii
-Eiv/Ev

Participant No.4

-(mis)
-E/F/Ei/Eii/Eiii/Eiv/Ev
-Eiv/Ev
-(mis)/Ev
-Fi

Participant No.5

-(mis)/B/Biii/Bi
-E/Ci/Cii
-D/Di/Dii/Diii
-Ei/Eiii/Eiv/Ev
-A/G/Fiv/Fi/Fii

Participant No.6

-(mis)/A/Ai
-C/D
-Eii/Eiii/Ei
-C/Eiii/Fi/Fiv
-E/Eiv/Ev
-Eiv/Ev

G. S. Pinnell: "Holistic Ways to Help Children
At Risk of Failure."
(2,124 words)

Participant No.7

-(mis)/Aiv/B/Biv/Bii/Biii
-C/Ciii/Cv/Civ/Cii
-D/Dii/Di/Diii
-E/Ei/Eii/Eiii/Eiv/Ev

Participant No.8

-(mis)/A/Ai/Aii
-B/Civ/Eiii/Eiv
-Di/Dii
-C/Ciii/Cv/Cii/Civ/Eiii
-E/Ei/Di/Bi/B

Participant No.9

-(mis)/A/Aii/Aiii/Aiv
-Aiii/Ci/B/Bi/Biii/Biv
-C/Ciii/Ci/Civ/Cii/Cv
-D/Di/Ei/Ev/Eiii
-Ev

Participant No.10

-(mis)/B/Biv/Aiii/Aiv
-Cii/Ciii
-Cii/Civ
-Eii/Eiii/Eiv
-D/Di/Dii

From the Retelling protocol of this set of readers,
it would seem that (for the most part) the structure

strategy approach (Meyer, 1985)--as explained in Chapter III--to text comprehension is being used. This, however, should be no surprise because according to him the structure strategy seems to be the dominant reading strategy hypothesized for skilled comprehenders in a prose learning task. These readers search out and follow the text's superordinate structure and focus on the text's message and how it relates to supporting major details. In structure strategy processing activities, the focus is on a search for major text-based relationships among propositions--i.e. there is a search for relationships that can subsume all or large chunks of this information and tie it to a summarized, comprehensible whole.

As was observed in their reading during the Think-Aloud task, the participants in this study read the text line by line in a linear fashion but they did not wait until after they had read the entire text to find the top-level structure and other subordinate relations that subsume large chunks of text. According to Meyer, readers employing the structure strategy are hypothesized to approach text looking for patterns that will tie all the propositions together, and for the author's primary thesis, which will provide the content to be bound by these patterns or schemata. Then they search for relationships among these primary theses and supporting details.

6.0.9. Authors' writing styles and their relationship to participants' reading and Retelling

As students, we are often reminded that expository prose normally follows a pyramidal form of development. The writer usually tries to get to the main point as soon as possible. Thus, his/her text will first provide the overall elements of a topic and these elements are embellished with further paragraphs. This form of text structure is prevalent in the two articles read by participants in this study. Within paragraphs, the first sentence sets up the theme or the topic of the paragraph and subsequent sentences that will embellish the theme or topic.

In addition to this, there are many rhetorical devices that a writer may use to convey information in expository prose. Decker (1974) has enumerated the following rhetorical devices; (1) Classification, (2) Comparison and contrast, (3) Illustration and concretizing, (4) Analogies, (5) Process analysis, (6) Cause/effect analysis, (7) Definition, (8) Induction/deduction, (9) Description, and (10) Embedded narratives.

In the Kenneth Goodman's article "Who Can be A Whole Language Teacher?," techniques 2, 3, 5, and 6 seem to be at play. First, the Whole Language teaching situations in New Zealand and the United States are compared. The reason why it is successful in New Zealand is then illustrated and its poor acceptance in the U.S. criticized through examples. How the program is carried out is then described

through the various processes carried out for the benefit of the program receivers. Finally, the effect of teachers' dissatisfaction in the American classroom situation is then given as the force that seems to have pushed them to adopt Whole Language as an alternative teaching strategy.

Guy Sue Pinnell's article on "Holistic Ways to Help Children at Risk of Failure" also adopts quite similar rhetorical devices. She illustrates the work done in the Ohio Reading Program and shows in what way it is analogous to the New Zealand Reading Recovery Program. She also includes a couple of embedded narratives which help to concretize the illustrations she has given.

It is interesting to note that the writing styles adopted by both writers are styles used in most prose reading in Malaysian academic settings: in schools, colleges, and even universities. A lot of writing exercises--often called "composition writing"--require students to write in a similar vein, and the only composition writing that allows students to be creative is in the "imaginative composition" classes. As such "automaticity" as regard to how familiar one is to a mode or modes of writing, becomes the word of the day for these participants.

This familiarity, therefore, was carried into and mirrored in the participants' Retelling styles. In this aspect of the Retelling task then, the processing load would have been mainly concentrated on the assimilation of the numerous kinds of information given in the compara-

tively long articles (1,797 and 2,124 words respectively). And if participants' comprehension had been helped by the number of supporting details and concretizations given by the two authors, their styles of (oral) Retelling also would have showed their understanding of that "embellishing" technique which they would have used by obtaining information either from the text per se or from their own store of background knowledge as university students in TESL.

Thus, in the Retelling protocol gathered for this study, the search for relationships among superordinates and subordinates and the subsumption of these different items are apparent. Although the choice of subordinates might vary, that of the superordinates remained the same throughout for both articles read. Of interest, however, is that superordinate G, which is the closing remark made in the last paragraph of the Goodman's article, was never mentioned by participants who read the article except participant no.5. The reason for this can be attributed to the fact that Superordinate G was but a summary of A, and to a certain extent, of Superordinate F, and thus needed no further mention.

Superordinate D was also not selected because it is not an integral part of the article. However, it was mentioned by participants No.5 and No.6, and though participant No.6 later decried that as "bull," Reteller No.5 did not indicate this was so. From the seriousness of

purpose portrayed by this particular participant, it would not be wrong to assume that her main aim was to Retell everything that was given in the article. This seriousness of purpose can be substantiated by the fact that among all the readers in this group, she is the only Reteller who included nearly all the superordinates and subordinates mentioned in this article.

Superordinate B (in the same article) was also not mentioned by half of the participants who read this article. So was superordinate C not mentioned by the same number though two participants did include one of its subordinates, mainly Ci.

If we were to follow Meyer's hypothesis that readers who employ the structure strategy would only use the author's primary thesis to help them bind propositions (in this case, superordinates, subordinates and supporting details) together, then we might be able to gain certain insights as to why superordinates B, C, D, and G were left on the wayside by some or most of these readers. Hypothetically, these superordinates are not pertinent to participants' explanation of their (mis): that the passage is about Whole Language, and that superordinate B is among Goodman's reasons for revising his book; C, the Anderson Report; D, the "humerous" hypotheses regarding the success of Whole Language in New Zealand; and G, a reiteration of of some of the subordinates under superordinate F.

6.1.0. Importance of superordinates, subordinates, and supporting details in texts and Retelling

It is also evident that since content structure in the articles selected is also organized in a coherent way, participants did not find it difficult to comprehend both texts. This coherence seemed evident in both articles. The article by Pinnell has a lesser number of superordinates but a larger array of subordinates; the smallest being 3, the largest being 6. The elaborating details for the last three superordinates were not very extensive except for Ciii and Ev. However, all Retellers in this group were able to accomodate quite a substantial number of these subordinates in their Retellings.

The article by Kenneth Goodman, on the other hand, is shorter in length but has a larger number of superordinates, and uses a lot of elaborations for its superordinates E and F. The largest component of supporting details can be found in Eiii/iv/v and Fi/ii. In processing terms, the article contains a greater number of argument overlaps, and these argument overlaps, hypothetically, enhance the comprehension of the superordinates and subordinates through good "rehearsal" (Baddeley, 1983). Thus, hypothetically also, unlike participants who read Pinnell, participants who read the Goodman article should be able to understand it better compared to readers who read the Pinnell text. The Retellings of both articles, however, showed that the two groups of readers

managed to retrieve pertinent information perceived as important for the completion of the Retelling task given to them.

At the same time, the explanation given by Baddeley (1982) can also be used to explain what is happening among the Retellers in this study. As these Malaysian readers were reading, it would seem that propositions which entered their working memory (WM) were organized as separate chunks depending on what the superordinate propositions were in the articles they read. These different propositions were integrated through direct propositional reference or argument overlaps or more simply, repetitions. The integration was possible since the articles' main topic components were presented in a linear way, and a majority of the participants were able to make use of their background knowledge to embellish them wherever possible. At the same time it would also seem that propositions which were processed or rehearsed in WM more often than others, were recalled more spontaneously than those that were less frequently processed. Thus, the inclusion (by all the Goodman's readers) of superordinates 'E' and 'F' and their respective subordinates (especially Eiii, Eiv, and Ev). These processing activities hypothesized for the structure strategy in this case are somewhat similar to explanations given for the levels effect by Anderson (1976) and Kintsch and van Dijk (1978).

Before going any further, I would like to go back to the questions posed early in this study, and they are:

What kind of strategies do participants use, and what kind of information is included in the Retelling task?

- (a) What kind of information do participants select to be included in their Retelling?
- (b) Do participants elaborate in their Retelling?
- (c) Do participants adhere to the information layout specific to the article they read in their Retelling?
- (d) Do participants demonstrate a personal meaning in their Retelling?
- (e) Do participants bring in some new information in their Retelling?

In answer to these research questions on the Retelling task, participants did not select information that they wished to include in the different "paragraphs" of their own-created text because all of them seemed intent on "giving back" all that they took into their memory systems. But the kinds of information they Retold also seem to hinge on how they were presented in the texts. A lot of their "elaborations," however, seemed to come from the articles themselves and very little from their own background knowledge. The majority mentioned textual information as it is laid out in the texts per se, though with some minor alterations amongst some of the Retellers.

As with the other processing task, oral Retelling will also show a certain degree of autonomy on the part of

the creator. Thus, in each Retelling protocol, one is bound to see a "personal meaning" attached to each individual work. The Styles of Retelling will indicate that no two Retellers will use all the information given to them in the same way, each manipulating the material available to suit her artistic ability and prowess. However, the amount of new information given is minimal because each Reteller seemed only intent on remembering what new information was read and to replicate source text in her own way, thus, "showing" all the information that she has stored in her memory in her oral text.

6.1.1. Reading and Learning

It is interesting to note that none of the literature pertaining to reading-and-retelling has ever made any overt mention of the fact that both these activities constitute an active process of creating a text. As readers read, a new text is being formed in their minds--each new piece of information read helping to make the formation more and more complete. When readers retell, another coherent text--made to a large degree from the source text--is also being created for the consumption of the hearer. Retelling, after all, is also a meaning-making act whereby the readers' thoughts are subsequently transformed into another "composed" piece of literary work, their own verbal text in this case, but a text nonetheless. If we accept this, then it would be correct for us to assume

that a kind of a "Reteller" Text Transaction Cycle must have been utilized by the readers (cum retellers) in this study. That being the case, it could be hypothesized that, based on what the Retelling protocols have to offer, participants also engaged themselves in a cyclical process of information retrieved--to create a new text based on the principle of reasoning and information transfer posited by Baddeley (1982). (Refer to Figure 3 on page 35.)

As with any composing process, Retellings also call for a title or a theme. This need was also observed among the ten participants involved in this task. Every one of them included Superordinates A or a "main-idea-statement - (mis) as an introduction to their Retelling. Once the topic had been declared, each would then proceed with her oral text creation by selecting superordinates and subordinates that she perceived were the most appropriate for the completion of this task. This process of constructing and selecting can be analogous to what was happening to readers as they tried to read and understand texts. Thus, if we were to transpose Harste's RTTC onto one of Baddeley's WM components--the Articulatory Rehearsal Loop--then we would be able to hypothesize the process that each reteller went through as she initiated each superordinate or subordinate, reflected on the validity of it being included, made connections between former and subsequent ideas, and/or as she restated or initiated the next super-

ordinate and subordinate to be placed in the Loop. Then, the cycle of processing in the Reteller Text Transaction Cycle (RETTTC) would start all over again.

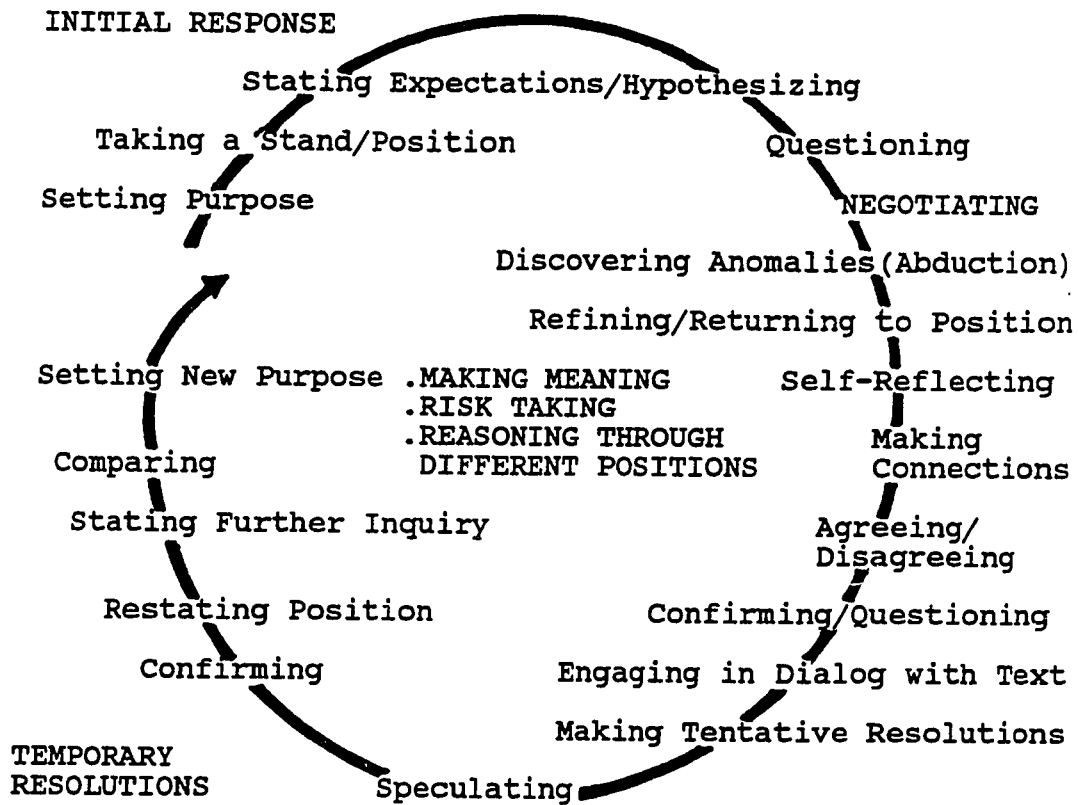


Figure 13: Reteller-Text Transaction Cycle

(Adapted from Harste's (1989) Reader Text Transaction Cycle).

The selecting processes that participants go through are important to remember because as much as Retellers want to show how much of the texts they have comprehended and remembered, they also want to maintain the autonomy of their own created text. Perhaps, this could be an indica-

tion of particular a reader's information storage system. This aspect should also be interesting if researchers were to compare prose retelling with narrative retelling/story retelling. However, this is not within the domain of this research project and has to be left for others to do.

CHAPTER VII

7.0.0. **Freewrite Analysis (Delayed Recall)**

7.0.1. Writing Procedure

In this part of the study, the participants were asked to write a short paper in response to what they had read (and retold). The main idea of this Freewrite exercise was for them to react to the article; how and in what way had the author managed to relate to their past, present, and future situations and thinking. They could react to the article as a whole or to any specific points made by the author. They were also reminded that the writing task would not have any fixed pattern for them to follow and that they were free to adopt any style they were familiar and comfortable with. At the same time, since the time given for this task was only thirty minutes, they were instructed to treat their work as a rough draft rather than a final product, and not to worry about spelling or do a revision of what they had written. (The Freewrite Direction can be found in Appendix E.)

Participants carried out this part of the study in the Language Recording Laboratory. Even though recording was not part of the procedure, the air-conditioning

offered by the booth was conducive for the kind of work each participant had to do.

Each participant was made to feel comfortable and then she was also asked if she needed further clarification as to what she was supposed to do for the freewrite task set before her. If the researcher felt that the participant was ready to begin, she would hand her a piece of fullscap paper (8 1/4" by 11 3/4"); the standard sized paper used at the university, and the writing activity would then begin. The researcher did not monitor any aspect of the writing activity but left each participant to her own uninterrupted work.

At the end of the thirty-minute period, participants handed in their work to the researcher outside. These written products were sorted and numbered accordingly, after which analysis would then begin. (A sample of a participant's Freewrite is given in Appendix H).

7.0.2. Method of Analysis

Analysis was done on the basis of only the content of the participants' Freewrites. Each written product was read once for coherence by the researcher and by the other two readers who had been involved in this research project from the very beginning. Then, for every paragraph in the Freewrite, each item of information which clearly indicates that it is a superordinate or subordinate from the articles was marked. This process was also done for all

the paragraphs that were in that particular Freewrite. The whole procedure was then repeated for the rest of the Freewrites collected in this study.

In many instances, it was easy to detect the main ideas and supporting details that participants had used in their Freewrite. The majority of the participants also tended to integrate ideas from the title and the first paragraph of each article and paraphrase them into their main idea statement. Where this occurs, the first superordinate from each text will be used to indicate that this was the case unless mentioned otherwise. These are tabulated in the following page.

It is important to indicate here that given the fact that even though participants were allowed only thirty minutes to write their Freewrite, the products of this task were quite good. It is also important to indicate here, too, that sometimes it is difficult to pin-point particular superordinates or subordinates in participants' written work because these would have been collapsed into a whole new "idea" which participants now use as source material to help create their own text. In this respect then, their main concern was not the tabulation of main or supporting ideas but the creation of pieces of work particular to their own leanings, interests, and concerns, and which, in turn, were also subjected to the environment they were in, their aim for writing, and the audience they perceived to be reading their work.

7.0.3. Emerging Patterns in the Freewrites

In the diagrams below, the number of superordinates and subordinates used by participants in their Freewrite is tabulated.

Ken Goodman: "Who Can Be a Whole Language Teacher?"

Emerging Superordinates and Subordinates in the FREEWRITES

Superordinates and Subordinates selected.	<u>PARTICIPANTS</u>					
	1	2	3	4	5	6
A	*	*	**		*	
Bi					*	
Ci		*				
D			*			
E		*				
Ei			*	*		
Eii	*	*	*	*		
Eiii	***			*	*	***
Eiv	*	***	**	**		*
Ev					*	*
Fi	*	**	**	**	*	*
Fii			*	*		
Fiv		**				***
G					**	

(* denotes the number of times a Superordinate or Subordinate is mentioned in the Freewrite task.)

Gay Sue Pinnell: "Holistic Ways to Help Children
At Risk of Failure."

Emerging Superordinates and Subordinates
in the FREEWRITES

Superordinates and Subordinates selected.	<u>PARTICIPANTS</u>			
	7	8	9	10
A			**	*
Aiii		***		
Bii		*		
Biii		*		
C	*	**	**	**
Ci	*	*		
Cii	*	*	*	*
Ciii	**	*		
Civ	***	*		*
Cv	*	*		
Cvi	*			
D	*			*
Di				*
E	*			*
Eii				*
Eiii			*	
Ev				*

(* denotes the number of times a Superordinate or Subordinate is mentioned in the Freewrite task.)

From the Freewrite diagrams above, it becomes obvious that not all the information retrieved for Retellings was included in the Freewrites. The extent of use for each superordinate and subordinate recalled for use in the Freewrite can be seen in the number of mentions indicated in the two tables above. Thus, if we look at the Extended Model of Discourse Comprehension given below (based on Flower's 1989 model), it then becomes obvious that not all

the components in the (original) Writer's Mental Representation were transferred into the Reader's Mental Representation, and out of this "pruned" transfer, only three or four of the components were retrieved from LTM and used by the readers-cum-writers in this study as a basis for their NEW TEXT. Apart from that, other components from the participants' own background knowledge were also found incorporated in a way unique to each individual writer.

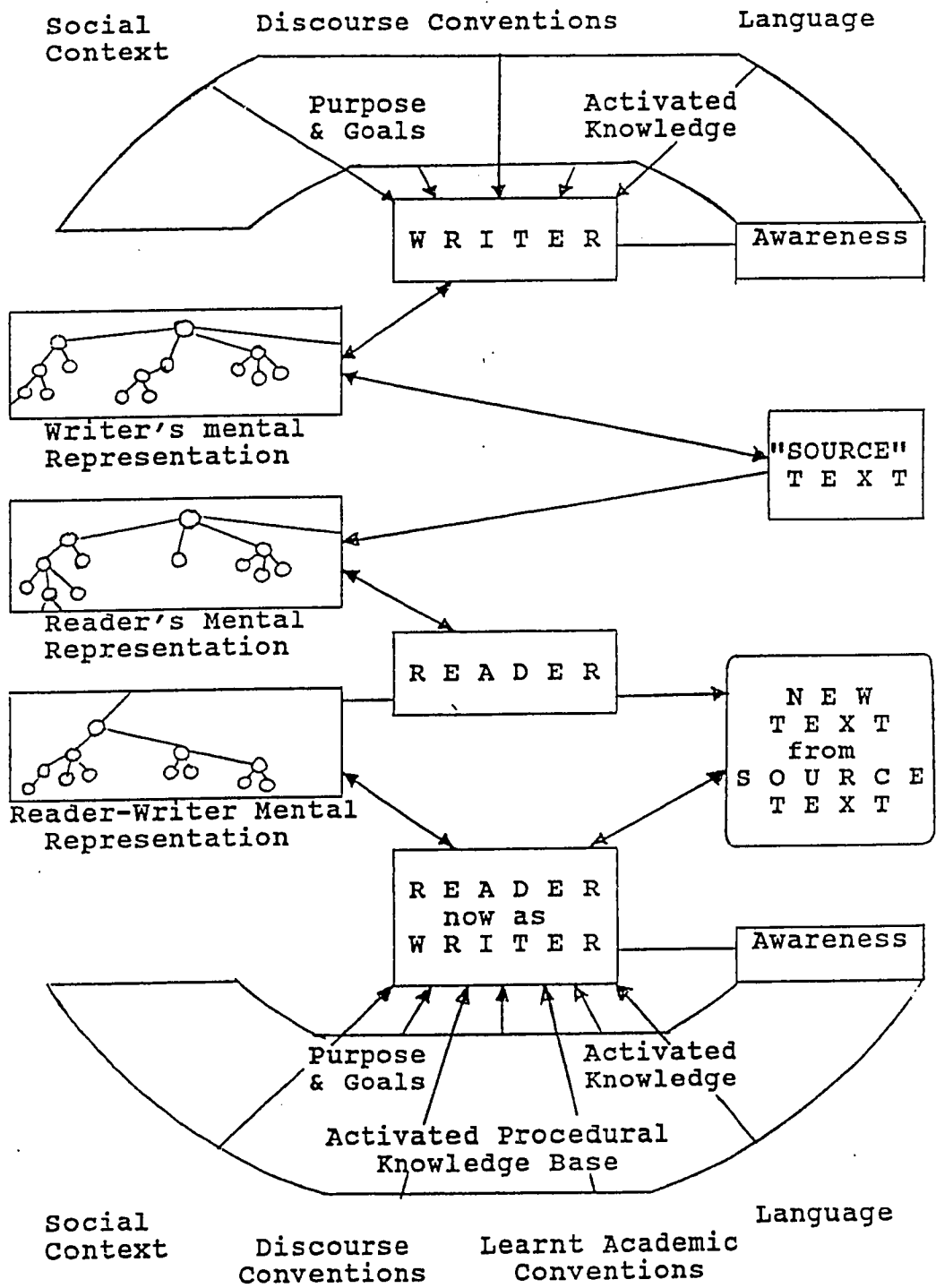
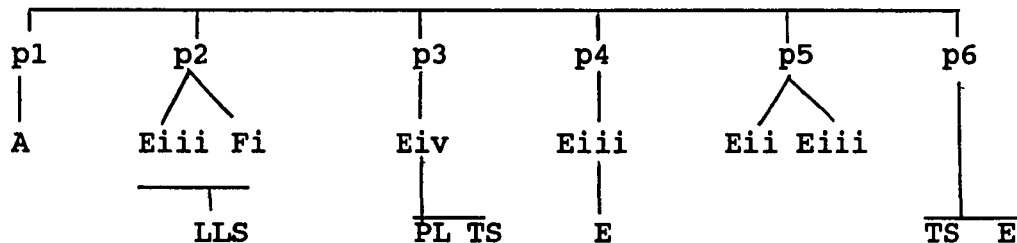


Figure 14: An Extended Model for Discourse Construction
 (Adapted from Flower's (1989) Discourse Construction).

It is, therefore, interesting to see that since a lot of college writing has to come from some form of source material-- whether written or spoken--students have to learn how to re-create in order to achieve some kind of autonomy in their work. What this group of participants seemed to have done was first, to select the appropriate information from source material, and second, to embellish the selected information with appropriate background knowledge retrieved from LTM. Finally, the selected components from source text and the relevant embellishing information from LTM were laid out in varying styles and in differing depths of explanatory techniques. For example, Participant Number 1, who read the Goodman article, did her Freewrite in the following manner.

Goodman



In this Freewrite, 'Goodman' refers to Kenneth Goodman's article "Who Can Be a Whole Language Teacher?" Following that, the various numbered "p's" denote the number of paragraphs found in this particular Freewrite. Within most of the paragraphs, the participant has included a

number of components A, Eii, Eiii, Eiv, and Fi--superordinates and subordinates--which are selectively elaborated with LLS (Linking to Local Situation), PL (Personal Link), TS (Taking a Stance), or E (Elaborating).

In this Freewrite, participant No.1 first broached the subject by using the author's method of bringing his readers into the text--that is, by talking about the increasing popularity of Whole Language as a method of teaching reading. Following this, she then used Eiii (Government involvement in the New Zealand schools) to show how Malaysian government-run tests could also be carried out to ascertain the plausibility of using WL in Malaysian schools. This notion of government involvement was then linked to Fi (characteristics of WL teachers in the U.S.)--that selected teachers should be given the task of carrying out the program, and that "[t]hese teachers must be those who are really keen in helping the pupils, and those who are prepared to work hard to ensure the success of the program."

Having connected the reader to the situation in Malaysia, she then talked of Civ (assumptions about reading based on the New Zealand Teachers' guidebook) as useful guidelines for Malaysian teachers to follow. The link to the preceding paragraph here is quite obvious, and the importance of the would-be WL teachers knowing what the program entails is further substantiated by the participant giving examples from her own experience. "I

have found that choosing the appropriate reading material can be a burden...I have to consider what interests the pupils, then the language used--is it suitable to their level? Often when the reading material chosen bears meaning to my students--something that they know--the reading lesson would be lively as the students participate by providing extra information related to the topic in the reading passage." She reiterated this by taking a stance saying that "I feel that teachers must have the interest of the pupils in mind when choosing materials for reading."

In the next two paragraphs, the importance of government involvement in the implementation and success of this program is again emphasized and elaborated upon. The elaboration, however, came mainly from the source text. It was as though this particular participant was trying to make a very strong case for WL by using success stories told in the text to enhance her claim. In fact, her commitment to WL is clearly seen in the last paragraph where she stated that if given the opportunity "...I would definitely go for this approach," because she felt that many students are weak "not because they are stupid, as often teachers claim, rather teachers have not given them enough help and attention they need."

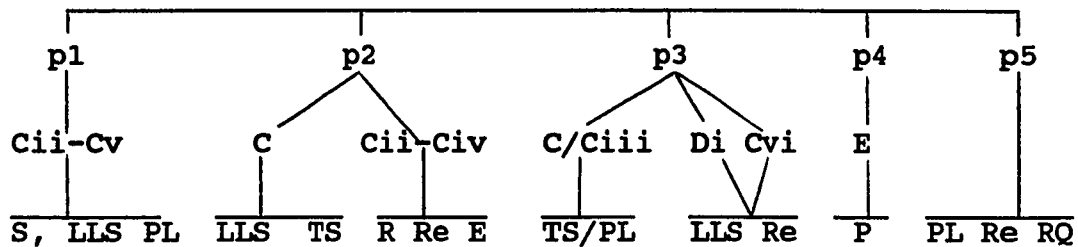
As with participant No.1, all the other participants who read the Goodman article followed a more-or-less similar style of writing their Freewrite. The choice of

superordinates and subordinates was quite similar, the emphasis being mainly on Eii, Eiii, Eiv, and Fi. Having quite a good knowledge of the educational system in Malaysia, I am not at all surprised why the choice of information selected from source text was as it was. Most teachers are frustrated by the academic lethargy often found among elementary and high school students doing English in an environment where lack of a superior command of the English language is no longer considered detrimental to upward educational and social mobility.

This sort of attitude should not be surprising to those who are involved in Language Planning because oftentimes, when a country is striving to establish its own National Language, the other language which it tries to displace is bound to suffer. If the teaching method has not changed (but the Educational emphasis has shifted), then the need to look for another method of teaching is necessary to cater to this change. To these teachers in Malaysia, the information they have gathered from the texts read is new. Anything new is worth trying-- especially one that seems to work in a developed country, like New Zealand, which geographically is quite close to home.

Selecting from source material and finding complementary embellishing components for them from LTM is also observed among the Freewrite writers who read the Pinnell's article. Participant No. 7, for example, wrote in the following manner.

Pinnell



'Pinnell' here refers to the article by Gay Su Pinnell "Holistic Ways to Help Children at Risk of Failure." The numbered "p's" on the first hierarchy of nodes and the elements that follow in the next consecutive lines or nodes are to be read in the same manner as that done for the diagram for participant no.1 above, except for one difference. The dash (-) between subordinates 'Cii' and 'Cv' indicates the inclusion of other subordinates--i.e. Ciii, and Civ--in that paragraph.

In the case of this participant, superordinate C seemed to be the compelling element in her Freewrite. This is seen in the first introductory remark she made where the importance of a 'holistic' concept of teaching was rephrased and the various subordinates (especially Cii, Ciii, Civ, and Cv) were integrated in the first paragraph. "I remember being taught that we should start teaching anything holistically and not the parts first. If you concentrate on the parts, they may not remain in the minds of the learners because they are merely disjointed."

This point was again reiterated in the second paragraph in the need for teachers in Malaysia to "try to get effective ways to motivate the students to read and thereby improve their command of English." In order to do this, she posited that "[i]f we introduce the RRP in our Primary and Secondary schools, it could do wonders to the students." In this sense, the participant is also trying to inform her reader that whatever method they have been using in the schools up to present time has not borne any lasting effect, and so the need for another method--a method of teaching where "[r]eading would become meaningful to [the students] and they would also be motivated to write because reading starts making sense to them."

In the third paragraph, the participant's belief in the effectiveness of the RRP can be seen in her remark that "I truly feel that if I were exposed to the RRP, I would have developed better reading strategies than I have right at this moment." At the same time, in linking the RRP to the situation at home, she also realized that the government might not agree to the implementation of such a program as the cost involved would be quite enormous. This is an allusion to subordinate Di where success of the Ohio Reading Program was supported by the Ohio State Legislature. Her concern in this aspect can be appreciated by her including subordinate Cvi which she rephrased and added to Di in the following manner. "Imagine the hours of training the teachers have to undergo, the number of teachers that

have to be excused from schools, and the time it would take for student-teacher interaction on a one-to-one basis...The problem with us lies in the fact that there are just too many students in a class." Here then is a situation where enthusiasm was dampened by the realization of the educational environment and (perceived) restrictions imposed on the schools at home.

However, not withstanding the problems teachers in Malaysia are facing right now, she still maintained, in the following paragraph, that "the five general principles" of teaching reading could still be kept in mind by teachers if they wanted to help "poor" readers. "If all of us as English teachers do keep those principles in mind and practice them in our teaching, the students would most definitely be able to improve their reading."

In the last paragraph, the participant's conviction of the value and effectiveness of the RRP can be best summarized in the final remark that she made about herself, "The Recovery Reading Program has indeed put reading into 'new light' for me," and about her young daughter, "Will my little one react to it well? Can I succeed in motivating her to read? I can't wait to go home and try."

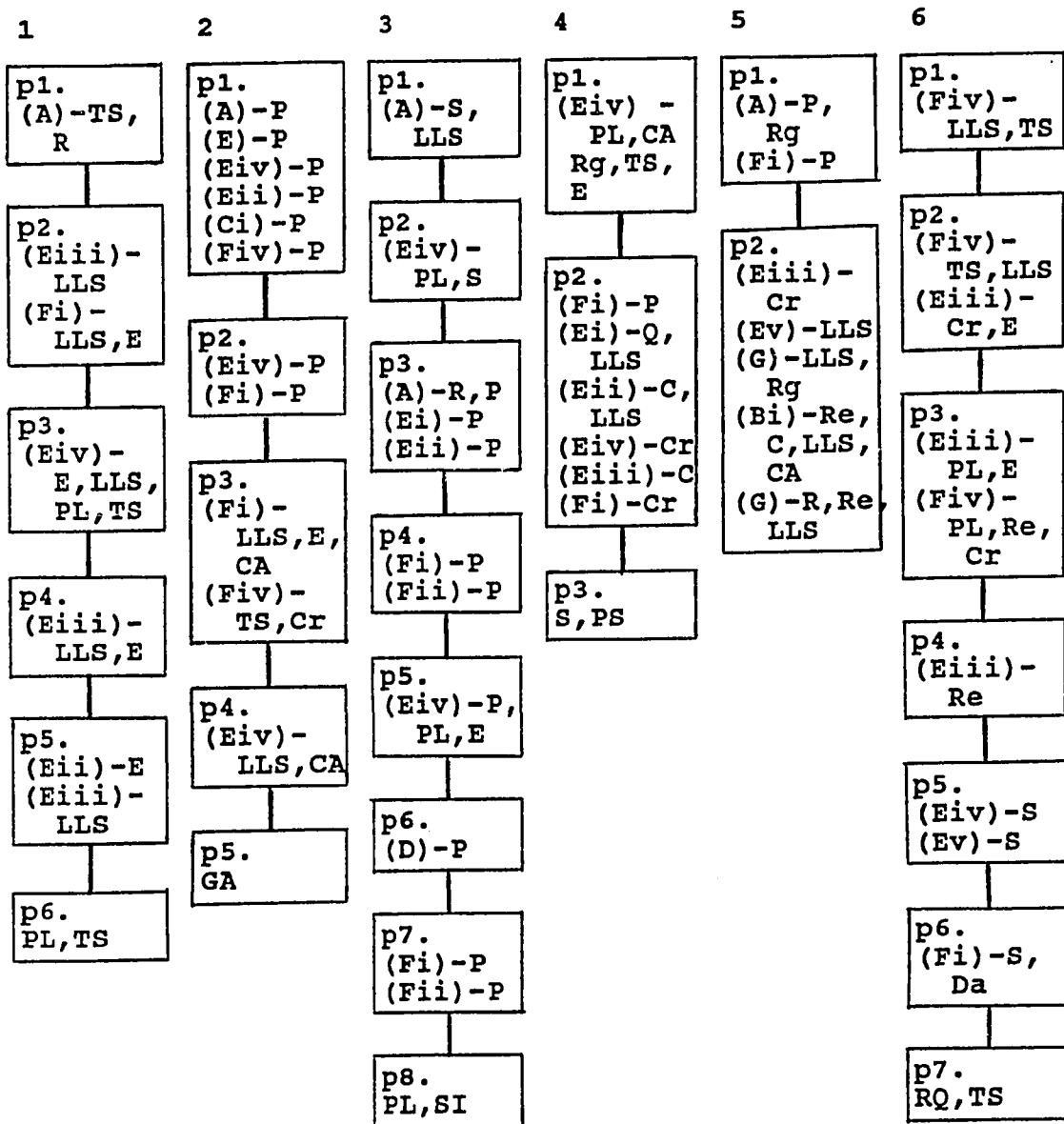
In this last set of four readers, almost all the subordinates under superordinates C and E especially (and to a lesser extent supordinate D) seem to be their main focus. Three out of four participants used superordinate A or one of its subordinates as "openers" in their

Freewrite. The remaining idea units are then interwoven in ways depicting the participants' own pattern and style of writing.

7.0.4. Styles of Freewrites

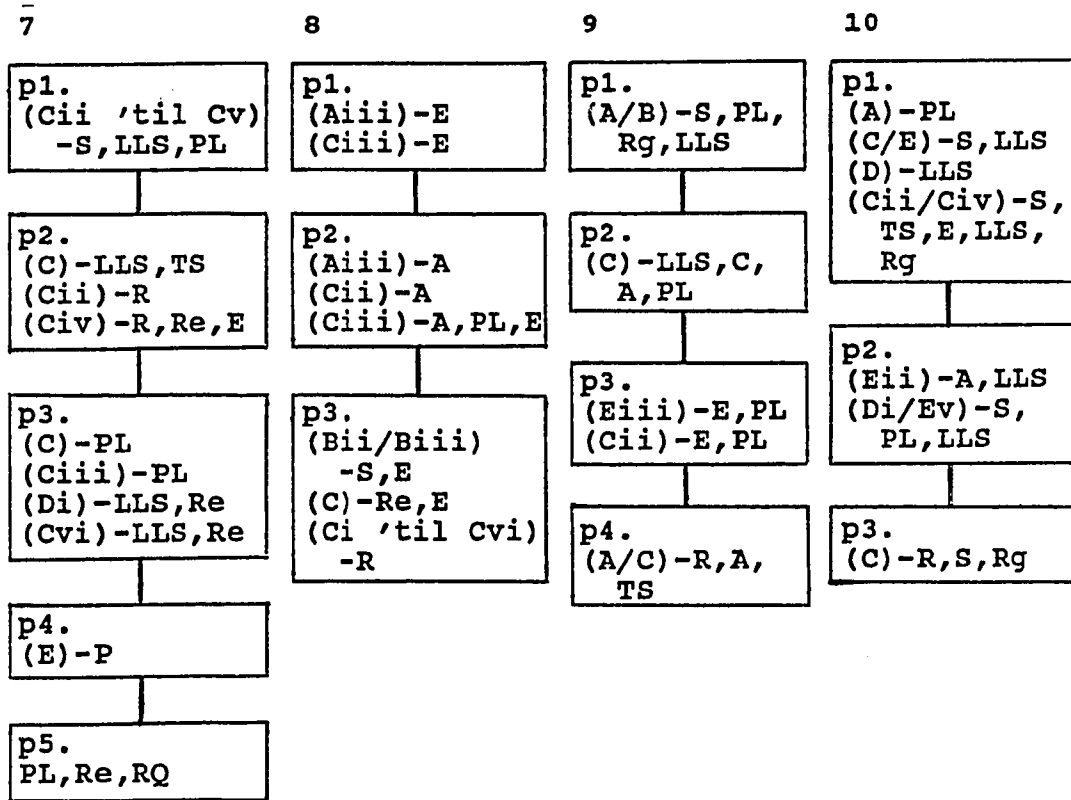
K. Goodman: "Who Can Be a Whole Language Teacher?"

PARTICIPANTS



G.S.Pinnell: "Holistic Ways to Help Children at Risk of Failure."

PARTICIPANTS



7.0.5. Key to Reading "Styles of Freewrites"

eg. Participant No.7

p1 -Denote paragraph and the number of the paragraph.

(Cii 'til Cv) -The first letters "Cii 'til Cv" within brackets) denote the Subordinate (or Superordinates) selected to be included in that particular paragraph. For this writer, the items of information selected are Cii, Ciii, Civ, and Cv. The letters following this (bracketed) textual information indicate writer's personal manipulation of that information selected plus some personal embellishments that she had used to suit her purpose and style of writing.

(What these letters stand for are enumerated below).
LLS= Linking (text information) to Local Situation
CA= Critical Analysis (somewhat connected to personal
Cr= Criticizing perspective).
Da= Disagreeing
GA= General Assessment (of text)
PL= Personal Link
Re= Reflecting
Rg= Reasoning
RQ= Rhetorical Question
SI= Stated Interest
TS= Taking a Stance
A= Agreeing (with text information based on personal
experience)
C= Comparing (usually connected to LLS)
E= Elaborating
P= Paraphrasing
Q= Questioning
R= Reiterating
S= Synthesizing

7.0.6. Similarities/Differences in Information Recalled by Readers/Writers

In order to understand the implications of writing from source text, we need to look back at the extended model of Flower's Discourse Construction in Figure 14 above. In this extended model, I have included an "activated procedural knowledge base" (i.e. knowledge of how to do something) as opposed to "activated knowledge" which, if I am not mistaken, is Flower's declarative knowledge, as part of the inner circle. I have also included another component, "learnt academic convention" (i.e. a culturally-based convention particular for that environment) the subject is in, as part of the "outer circle." This learnt academic convention is not akin to the "discourse convention" but a tacit knowledge which has

been acquired over time and through numerous classroom exercises.

In this extended model, the constructive processes of reader-cum-writer are (at this point) at the center of the stage. The reader/writer acts on her awareness and activates the relevant knowledge geared for the goals she has set for writing in response to her reading, and this act is either helped or hampered by the outer circle of external forces. The interaction between the inner and outer circle is an important factor to study because in this Freewriting task, the reader/writer knows the role she has to play in order to succeed in the discourse community she is in at the moment.

This separation also reflects the difference between the information the reader/writer could respond to and that which is actively represented in her mind in a given performance. In analyzing this freewrite data, the inner circle which symbolizes the active forces that influence a given act of composing (especially regarding the information fed to the composing system) then takes center stage and becomes the center of analysis.

As mentioned earlier in this chapter, when dealing with students at the tertiary level, it is interesting to find out what kind of information from source texts they are likely to select and include in a writing assignment. In this particular study, it has been observed that the kind of information selected and included in participants'

NEW TEXT seems to reflect what they deem important in terms of their own learning activity and also in terms of issues that they want to address. For example, both sets of readers seemed to focus on the idea of teaching reading in a wholistic manner.

Thus, in this Freewrite task, the main "goal" of the participants (as in Flower's "goal") was to recall, connect, and embellish selected superordinates. And although the direction given for the task was not to confine them to only events supplied by the texts, the end product implied that participants did not want to venture too much out of the presently learnt domain. Thus, in the context of the extended model of Flower's Discourse Construction (1989), this set of Reader-Writers never ventured to criticize this newly obtained information. They, however, tried to connect it with as much of what they know from personal experience and background knowledge. This was important in terms of their learning processes and within the context of their present academic and future professional environments. Through this interconnectivity of textual information and background knowledge, their understanding of the new-found information seemed to be better enhanced.

Thus, in Goodman's set of reader-writers' NEW TEXT, we see superordinates E and F, with most of their subordinates incorporated in varying intensity. Pinnell's set of reader-writers' focus on superordinates C and E also

indicates the relevance of these two elements in the participants' learning processes. In other words, both sets of readers found the concept "wholistic teaching" something new and important for them to know in terms of what is happening in the schools in Malaysia.

By looking at each of the text-tree structures (Figures 11 and 12) again, it will also become clear why these components were selected. The data indicates that at points where much "elaboration" was given by the articles concerned, these are the components that the Reader/Writer selected for the writing assignment. This further proves the point made by Meyer that the probability of any information to be retained in memory depends on the amount of "rehearsal" conducted on it. Thus, rehearsed or "elaborated" items are more often than not remembered and extracted for later use.

In the case of the Goodman set of readers, well-rehearsed components are found in subordinates Eiii/iv/v and Fi/ii respectively. For the Pinnell set of readers, rehearsed components are found in subordinates Ciii and Ei/ii/iii/v. However, of the four participants who read Pinnell's article, all four included not only the components in the superordinates mentioned above but the rest of the superordinates in the text--A, B, and D. (Refer to *Emerging Patterns in the Freewrites*, section 7.0.3.) This indicates that the inclusion was primarily based on the relevance of these components in the structure of the NEW

TEXT being created. The diagrams also indicate that most of the components recalled were in the same sequence as they were presented in the text.

7.0.7. Learning and the Intelligence System

While it may be interesting to concentrate on aspects of retrieval based on concepts like "relevance," "elaboration," and "rehearsal" in Freewrites, I would also like to touch upon the concepts of "intelligence systems" as posited by Dubois and Godart (1987). In describing their artificial intelligence (AI) model, Dubois and Godart define an intelligence system as a system which is in continuous evolution while becoming more and more complex. It must be adaptable - i.e able to find new behaviors when faced with new and unknown situations, and it must also be capable of invention and creativity. When the system is confronted with new and unknown situations, it must be able to strive to resolve them. An intelligence system also always tries to escape apparently random events. It tries to get the best possible representation of the environment and of itself by rebuilding these events according to its own symbols in order to increase its autonomy and manipulate the environment with the highest benefit.

Based on their concept, participants, themselves being "intelligence systems," would have also resorted to using many of the strategies postulated by Dubois and

Godart in creating the Freewrites. They would have also assessed their "environment" and manipulated it accordingly. In this respect, the environment for the participants would have been a combination of the researcher's needs and participants' analyses of these needs and expectations. Having assembled their knowledge of this environment they would have then, probably, selected the most relevant information which they perceived would be of interest to that "environment" in the creation of the NEW TEXT.

Another important property of natural intelligence systems is their capacity for learning and self-learning. Dubois and Godart propose the following definitions.

(a) **Learning:** external supervisor teaching a system.

This leads to a directed knowledge base.

(b) **Self-learning:** attainment of knowledge by itself.

This leads to a knowledge base non-directed by an external supervisor.

In any learning situation, the external supervisor--which could be the teachers themselves, or books, television, etc.--is an important component of input. But any external supervisor, or directed knowledge, cannot have any important impact if students do not integrate it through self-learning. In this case then, real learning can only take place if one is endowed with

- (a) **Meta-learning:** acquisition of learning capabilities by learning. This meta-level activates a learning base.
- (b) **Meta-self-learning:** acquisition of self-learning capabilities by self-learning. This meta-level activates a self-learning base.

(Dubois & Godart, 1987)

In many classroom situations, a lot of learning is enhanced every day whereas self-learning is very poorly promoted. In many schools in Malaysia, learning is very much steered by teachers. This outside steering force, or what I would call the "exosteering" force, by teachers, usually leads to banal regurgitation of information from texts and lectures. Therefore, many reading-and-comprehension exercises also demand a form of book-recitation, a composition-writing class, a covert recitation of grammar rules, and thus the oral or "speaking" class is a recitation of everything learned. In this kind of learning situation, most students are reluctant to speak out in class for fear of not adhering to learnt content. Self-learning is allowed to manifest itself if the content learnt or experienced conforms to what has been dealt with in class by the teacher. But it is the other form of self-learning, or what I would call the "endosteering" force of the students themselves, that

needs to be enhanced.

Thus, with respect to the exo- and endosteering forces above, participants' selection of information could also be attributed to the learning emphasis they have become used to. If that is the case, then their selection of information for the writing task would not only be from those given in the source articles but the presentation of that information would also progress in the manner used by the two authors themselves.

Before leaving this chapter, research questions given in Chapter IV (tabulated again below) will be answered. First, it is obvious that the participants did make a conscious selection of the kinds of information they wished to include in their Freewrites. The selection, as was observed depended on what they perceived as important in terms of what they wanted to learn from the texts read. Second, once the selection had been made, most of the participants tended to write it in the layout specific to the article they read (although repetition of selected information might occur depending on its relevance to the formation of their Freewrites). Third, elaborations occurred depending also on the amount of given "elaborations" in the texts themselves and the background knowledge that the participants could bring to the writing task.

In answer to the next question, it was clear that the information selected for the Freewrite was not the same as

that selected for the Retelling task. Although the participants still relied on SOURCE TEXTs for much of the content in their NEW TEXT, they also blended in their own stored sources of information. The need for autonomy for a text of their own creation was, therefore, quite apparent. Lastly, as mentioned before, the primary aim of the participants seemed to be that of learning something new. As such, their focus was not on taking a stand--to agree or disagree to given textual information--but to try to consolidate and link their new-found information with the knowledge structures that they already possessed. If a stand was ever made, it was merely to reiterate what they felt was a good method to try to teach reading and writing, a method which they did not know of before reading the articles concerned.

What kind of strategies did participants use, and what kind of information was included in the Freewrite task?

- (a) What kind of information did participants select to be presented in their Freewrite?
- (b) Did participants adhere to the information layout specific to the article they read in their Freewrite?
- (c) Did participants elaborate in their Freewrite?
- (d) Was information selected for the Freewrite similar to that used in the Retell?

- (e) Did participants take a stand in their
Freewrite?

7.0.8. Writing and Learning

We ordinarily think of writing as a private, individual act originating inside us. But once we begin to think of writing in a broader sense, as a whole process of generating and shaping language for the purpose of technologically displacing conversation, then the social nature of writing asserts itself in many interesting ways. In this case then, we must write as a cooperative or collaborative social activity within a conversational community, because we must write to people who "speak our language." Thus, what we write and how we write it is governed by the language of the community of people within that conversational community and by what we write on the subjects that interest them.

Good writing, however, requires the writer to learn to use language about writing itself, writing as a continual process of making decisions or exercising judgment, as those decisions and that judgment are applied to the community. This way of looking at writing is often referred to as the social constructionist view of writing. Looked at from this perspective, writing, is a social act and thus has to abide by certain social rules and etiquettes. Apart from these rules and etiquettes, it is also an active process. Writing is, after all, a meaning-making

act whereby the readers' thoughts are subsequently transformed into a "composed" piece of literary work written in a style pertinent to the individual writer.

Based on the perspective above, we can assume that as this study's set of readers cum writers engaged themselves in the act of composing, a cyclical process of choosing and retrieving textual information from memory also took place. This process of constructing and selecting can also be analogous to what was happening to both readers and retellers in the previous two chapters. Although this cyclical process could be described as the one used in the Reader-Text Transaction Cycle (Harste 1989), we can also assume that the cycle is surrounded by other forces present in the environment where the writing task was performed.

So, if we were to transpose Harste's RTTC onto Baddeley's Articulatory Rehearsal Loop, we could hypothesize the process that each reader/writer went through as she wrote her Freewrite. First, she would initiate each superordinate or subordinate, reflect on the validity of it being included, make connections between former and subsequent ideas, and restate or initiate the next superordinate and subordinate to be placed in the Loop. Then, the cycle of processing in the Writer Text Transaction Cycle (WTTC) would start all over again. At the same time, the WTTC itself would be under the supervision of an outer circle of social rules and etiquettes mentioned above. The

intra- and interconnectivity of the WTTTC and the environment surrounding the writing act is complex and has to be mastered by each writer in order to succeed.

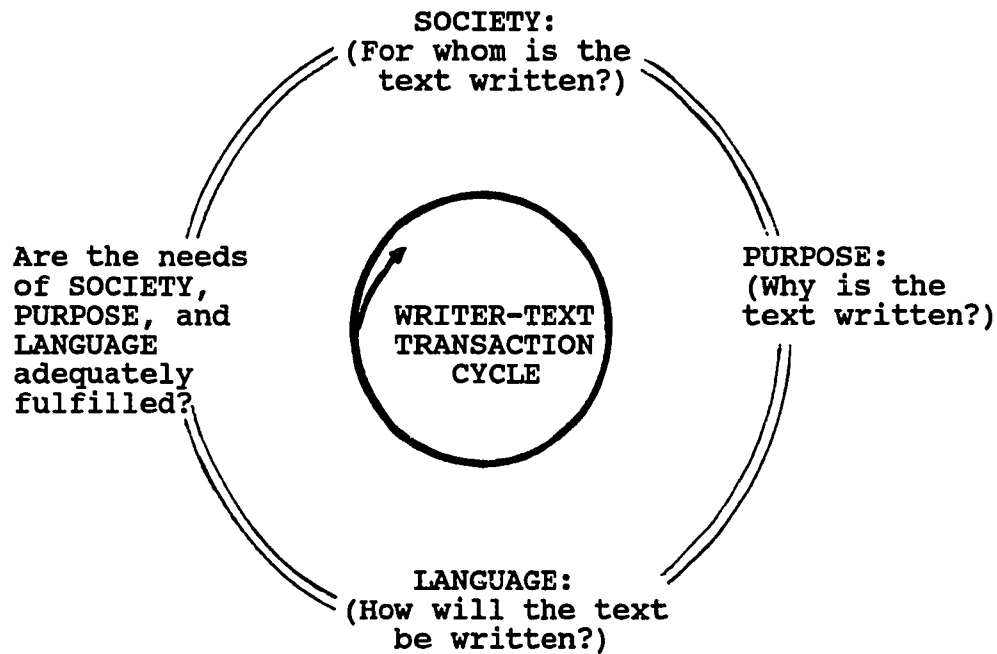


Figure 15: Writer-Text Transaction Cycle

7.0.9. Conclusion

In an academic environment where critical intellectuals are supposed to emerge, students cannot just parrot information gained from either teachers or texts. They should be more confident in generating personal content and to handle high-level abstractions in their writ-

ten (as well as oral) communication. They should also be able to evaluate, deduce, postulate, and generate new ideas by garnering all other related information that they have acquired. This process of information integration has to be a conscious process and needs to be learnt.

In this respect, Sternglass's (1988) observation that "Goal-setting...is influenced, or even controlled by, the complex interpretations of the demands being made on the individual at a given time and fits into that individual's present life in a particular way" (p. 114) holds true. The interpretation made by this set of participants was learnt interpretation. To criticize, to add intertextuality, and to generate new ideas is not stressed in their learning system. Langer's (1986) process of "growth" during writing did not really take place in this Freewrite exercise.

Although generation of new content did not happen, this study's set of participants, however, did employ two different strategies in writing their new texts. One, they would select source-content to fit the background-knowledge embellishments that they could incorporate in their newly created texts. Two, since the Freewrite was also a form of learning from source text, they would elaborate source-content selections with either educated hypotheses or with questions hypothetically directed to the researcher-reader.

Nevertheless, the data from this set of written Freewrites contributed important insights to the kind of

engagement with the reading materials that participants had made, their exploring of thinking, and subsequent learning gained from reading. The Freewrites were weak and nearly devoid of any form of criticism that had appeared in the Think-Aloud protocols. Perhaps, this is a manifestation of the fear of permanency of written words as alluded to by Ong (1982): that writing is that which can be scrutinized, criticised, and used as a legal document. Orally presented sequences, on the other hand, are always envisaged as occurrences in time, impossible to examine because they are not presented visually but only heard; thus the appearance of some form of criticism in the Think-Aloud data. Although the academic system in Malaysia has never, overtly, prohibited open criticism from students, the tacit knowledge is that teachers know best and as such learnt academic conventions took the upper hand in this aspect of the Freewrite task.

CHAPTER VIII

8.0.0.

Summary of Findings

One thing I would fight for to the end, both in word and deed if I were able - that if we believed that we must try to find out what is not known, we should be better and braver and less idle than if we believed that we do not know it is impossible to find out and that we need not even try.

Socrates, The Meno

Reading in an academic setting is a day-to-day task from which no student can escape. But the extent to which the individual reads, understands, or is critical of what is read seems to depend on each reader's own ability and "learning" history.

This research work arose from the desire to know how proficient Malaysian English-as-a-Second-Language (ESL) students read for comprehension in their own academic setting. Secondly, I wanted to find out the kind of information that these students encode into long-term memory and how this encoding is manifested in their Retelling. Lastly, if these ESL students are required not only to read but to write from source texts, then it would be interesting to know how the information from these texts is utilized in their written work.

For these different purposes, three data gathering procedures were used: concurrent Think-Aloud protocol analysis, Retelling, and Freewrite. A summary of the findings for each of them is given below.

Think-Aloud Protocols

From the Think-Aloud data set, it has been observed that readers are always active in their interaction with a text. They take a personal stance as they debate and question the content of the text they read. They also assume and make numerous hypotheses about text content before finally accepting or rejecting these hypotheses. In no way do readers resemble the passive receptors of information that structuralists often allude to. This active interaction, manifested through Think-Aloud protocols, is an important aspect of reading because it gives a clearer picture of the kinds of strategies readers use in order to understand a text. The concept of "problem-solving" alluded to by Newell and Simon (1982) is made clear in this part of the study.

Retelling

The Retelling data set, on the other hand, has a totally different story to tell. Aspects of criticism, bias, and to a certain extent, cynicism, are no longer displayed in the participants' protocols. Only the higher order concepts and some subordinates form the main bulk of

their Retelling. Participants are only interested in presenting as much of the text content as possible. Meyer's (1985) postulation that competent readers tend to follow a structure strategy approach is well documented here.

The number of high-level concepts retold ranged between four and six. The choice of superordinates and subordinates as retold by participants does not vary and the order of retelling is chronologically similar to the presentation in the texts themselves. In most instances, the kind of information retold also indicates that these high-level concepts are those which carry a number of "elaborations" in the text or that these elaborations are provided by readers themselves from their store of background knowledge, or by both. This is an important aspect of the Retelling because "elaborations" seem to help copy information into long-term memory (LTM). When many elaborating details are provided by the text, readers' level of comprehension also becomes higher and memory retention seems to be better.

At the same time, apart from "elaborations," the length and complexity of the article read will also have an impact on the number of superordinates and subordinates that readers are able to access for Retelling at any particular time. An obvious reason for this seems to be the amount of information that readers are able to "chunk" together for encoding purposes. Other reasons can also be attributed to what Rosch (1973) might call "cognitive

economy" or what Miller (1956) calls the readers' "limited capacity" in processing information.

Freewrite

The Freewrite analysis gives yet another interesting aspect of learning that is connected to reading. When participants were told to read and Retell, a near-perfect match between content in text and content retold from memory is obtained. In the Freewrite, however, the chronological ordering of superordinates gives way to a mode of high content selection. Their aim in this writing task was to consolidate their background knowledge with new information found in the text for purposes of learning and to create some form of autonomy for their work. Thus, their selection of idea-units from the text will depend greatly on what they perceive as important in terms of their current learning situation. The enhancement of this newly-learned information also depends on how much it can be embellished from their stores of knowledge, given the constraints of the time allotted to them for this particular task.

8.0.1. How Are Findings Related to Other Cognitive Theories?

From the three data sets gathered for this study, it would seem that a Retelling can inform teachers of the amount of information that has been assimilated by a com-

petent reader. However, it does not necessarily inform them whether the assimilation has taken place in a matter-of-fact manner or whether the reader had to debate with the text before accepting or rejecting information presented in it. This aspect of the reader's active (or passive) interaction with the text could only be observed through the Think-Aloud protocols. At the same time, from the Retelling data it is also possible to hypothesize that the recoding of high-level concepts is enhanced through the amount of "elaborations" found either in the texts themselves or provided by participants from their own stores of background knowledge.

By looking at the Content and Styles of Retelling (section 6.0.8.), it will be observed that the maximum number of single or chunked superordinates and/or subordinates retold by participants ranged between four and six. In this particular respect, George Miller's seminal paper on "The Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information" (1956) might be of some interest.

"There seems to be some limitation built into us either by learning or by the design of our nervous systems, a limit that keeps our channel capacities in this general range. On the basis of the present evidence it seems safe to say that we possess a finite and rather small capacity for making such...[judgements] and that this capacity does not vary a great deal from one simple sensory attribute to another."

(Miller, 1956: p.86)

However, it would also seem that humans do have an ingenious way of transcending this limitation. According to Miller, by processing and recoding information into chunks, or into a group of entities, they are able to store a vast quantity of information into LTM. It is "[t]his kind of linguistic recoding that people do, seems to me to be the very lifeblood of the thought process" (p.95).

The chunking process is prominent in the Oral Retelling data of this study. Chunked recordings are prominent in both sets of Retelling protocols, the variation being in the amount of information found in them. For the Goodman readers, superordinates 'D' and 'G' are never mentioned (except by participant No.5) in their Retelling whereas the Pinnell readers not only mentioned all the superordinates (plus selected subordinates), but also arranged them in the chronological order as they appear in the article itself. The reason for the omission of superordinates 'D' and 'G' in the protocols of the Goodman readers is obvious. Though the article has seven superordinates (A to G), two are not important as useful text content per se: 'D' being "humerous contentions" and 'G' a reiteration of 'A.' This leaves the text with only five real superordinates.

With the omission of these (what I would call "zero" superordinates 'D' and 'G'), the Goodman text (which, initially was already shorter than the Pinnell text) becomes

even shorter. This had an important impact on Retelling because it allowed retellers more leeway in arranging information (superordinates and subsequent subordinates) in ways not shown by participants reading the Pinnell article.

If we look back at the Text-Tree Structure for both articles, we will observe that subordinates 'Eiii,' 'Eiv,' 'Ev,' 'Fi,' 'Fii,' and 'Fiv' in the Goodman article, contain quite a number of "elaborating" details. These highly "elaborated" subordinates are all included in participants' Retelling, some used more than once in their oral texts. This supports Meyer's (1985) contention that "elaborations" help transfer information into long term memory. Of the Pinnell retellers, only subordinate 'Ciii' was constantly "retold" by all participants concerned. Hypothetically, although subordinates 'Ciii,' 'Eii,' and 'Ev' are elaborated, they are not as densely elaborated as the Goodman subordinates. Although 'Ev' is as densely elaborated as 'Ciii,' only the latter is constantly mentioned by all participants in this group. The participants were probably already suffering from (Executive) system fatigue (refer to Baddeley's Working Memory System on page 35) by the time they finished processing the extensive number of subordinates under all the superordinates in the text. In this respect, the study has indirectly indicated that an understanding of the usefulness of "elaborations" could be of some help to reading teachers when selecting

reading materials--for purposes of learning new content materials--for students who are at different levels of reading-and-comprehension proficiency.

Again, using Miller's contention about some of the brain's limits in its capacity for processing information, it would also seem that recall of superordinates and/or subordinates rests not only on how information is copied into memory (depending on the amount of supporting details provided by texts or by participants' themselves) but also on the number of superordinates and subordinates that participants can process at a particular time for a particular task. Although this dissertation did not intend to test Miller's contention, the data does provide some interesting insights into part of his theory.

Reading teachers should also be aware that the total amount of information that a particular student has assimilated will not necessarily be represented through the student's choice of Superordinates and/or Subordinates in her Retelling. Some information which was not included in the participants' Retellings will emerge in their Freewrites. In this respect the idea of "choice" and Miller's concept of the mind's limited holding capacity are again important aspects to consider in terms of understanding the difference between reading and retelling and between reading and writing. The kind of information brought forth for the Freewrite was quite different from that given in the Retelling task. Different purposes for

reading undoubtedly triggered different cognitive and metacognitive strategies. Teachers who are involved in reading-writing classes must, therefore, understand these differences if a richer learning experience is to be gained by and from their students.

When dealing with students in a "learning" situation, teachers will also have to understand something about the mind at its very basic level, and this, I think can be better enumerated through the concept of the New Cybernetics (Rosseel, 1986).

8.0.2. Significance of Findings to the Concept of the New Cybernetics

The New Cybernetics is born out of the understanding of cybernetics, but it draws attention to both the internal determination of behavior, or "autopoiesis" and to its external determination, or "allopoietic" structure. Autopoiesis is characteristic of biological systems. Allopoiesis, on the other hand, can be found in information-processing and problem solving, that is, the control paradigm that underlies the design of artificial systems.

The "artificial" system referred to here is best defined by Herbert Simon (1981, first edition in 1969) as a system which has a given form and behavior only because it adapts or is adapted, in reference to a goal or purpose, to its environment. In other words, it is designed

to fulfill a given function in a given environment. In this view both man-made artifacts and man himself, in terms of behavior, are artificial.

The peculiarity of an artificial system is that its behavior is almost completely determined by the complexity of the environment to which it is adapted. This behavior will only reveal the internal characteristics of the system if the adaptation to the external conditions is not perfect. In other words, two artificial systems which are perfectly adapted to the same environment, in reference to the same goals, will behave in the same way, even though their internal structures may be completely different. For example, a computer and a human, which are both expert problem-solvers in a certain domain, will approach the same problem in the same way.

The difference between computers and higher order, cognitive systems (one of which is human), however, is that the latter are supposed to process information instead of matter or energy. According to this "artificial" paradigm, the cognitive processes characterizing intelligence and adaptation should be viewed as "information processing, problem-solving" processes. Problem-solving can be viewed as a search through an internal space of problem states which represents the space of actual or potential states of the environment, and hence embodies the knowledge the system has about the environment. The system then constructs models of itself, its

environment, and its relation to this environment. This model-building inherently points to the "intelligence" of the system.

8.0.3. The Autopoietic and Allopoietic Determinants in Reading for Learning

Using the above parallalism in reading, two artificial systems are in constant interaction with each other: the text and the reader. Each is controlled by its own internal and external systems; the reader, by his or her own mental schematic map and its surrounding environment, and the text by its own internal sentence and paragraph structures and external interpreter. However, the integration of information from both systems can only occur if and when their boundaries are "porous" or "open" so that absorption from either system is then made possible. If the two systems do not allow for the free flow of information-movement into each other's circuit, then information decay is bound to happen. In simpler terms, when neither text nor reader is flexible in approach or intake, then the probability of information not being accepted or disseminated is very high. This can very well result in the entropy or decay of both systems.

"Porosity" (in the context explained above) is a state which can be created. As long as teachers themselves are "open" and treat their students as "open" systems, the probability of a positive interaction between them and

learners will be greater. In time, each of them will also be able to absorb the duality of the autopoietic and allopoietic dimensions and understand the possibility and importance of their integration. However, if teachers continue to view students as black boxes fulfilling a predetermined function--that of transforming or processing certain inputs into certain outputs, then the way this transformation is carried out is not important as long as the desired output is produced. This is a very unkind conception because students are then treated as "closed" systems. And when there are instances where the output is not fulfilled, the system will be viewed as being useless. In a supposedly more open system of education, the type that we purport to have today, one would not expect a "closed" system of learning practised in educational institutions. Unfortunately, the practice is still going on. This comes about due to the naivete of some educators. In terms of reading from texts, books, and journals for classroom learning, the practice of "indoctrinating" students with a particular mode of reading is rampant. Reading, in most cases, becomes "structuralistic" in nature and reading materials are treated more as "closed" systems than they should be.

In a classroom situation, students are constantly bombarded by different amounts of information in different disciplines. The kinds of mental schemas or representation acquired by them need to be understood. The instruments

used to test and understand these different schemas will also have to be sensitive to the kinds of information they want to elicit. Thus the need for a flexible tool and approach to testing both aspects of the system organization, its autopoietic and allopoietic determinants. In this particular study, the kind of allopoietic control schema acquired seemed to have given the participants the notion that feedback that would be valued by the researcher would be very much text bound. The only indication that the participants do have their own autopoietic preferences could only be "glimpsed" through their Think-Aloud protocols and the various cognitive processes inferred from the product of the other reading-related tasks.

8.0.4. Recursivity and the Reader-Text Transaction Cycle

One cognitive processing aspect that is connected to what has already been stated above, is recursivity. Recursivity, as depicted in Harste's (1989) Reader-Text-Transaction Cycle (RTTC), is clearly evident in all the data gathered. In the Think-Aloud protocols, it was obvious that text processing is not parallel but is recursive in nature. Though many researchers have often compared the brain to a computer, there are aspects prominent in the Think-Aloud data that point to the fact that "linearity"--as often talked about in computer processing--was not the case in this set of participants'

protocols. The participants took in information in "chunks" and processed them through the various cognitive and metacognitive processes already explained. Even within the RTTC, the participants sometimes stopped in the middle of a sentence and would talk in terms of their own experiences, and after a lengthy "diversion" would come back to where they had "branched off" and continue on track. Sometimes this branching off would lead them into another topic and their awareness of this was reflected when they realized that they had strayed or that their presumptions had been wrong and that they needed to get back to where they had "left off." Then rereading would occur in order for them to bring their thoughts back on track. There were also "criticisms" and "humor" "human" aspects (devoid in computers) which, I believe, would not have been seen had this method of data gathering not been used in the first place.

Recursivity is also hypothesized to occur in Retelling and Freewrite because both of them would have also involved some cognitive and metacognitive processes required in any form of text creation: mentally, orally, or in written form. This aspect of mental recursivity in text creation has already been shown by Flower (1985, 1987, 1989, 1990), Emig (1985), and Sternglass (1988) in their writing studies and therefore needs no further elaboration here.

Of importance, however, is the idea that since the participants belong to a group of intelligent systems that

are complex and do not have "fixed" mental boundaries, their problem domains demand a constant revision or adaptation from a real environment. Their perception of the activities demanded of them will often lead to their discovery of new concepts or to the need of their transforming problem representations. It is this transformation that also needs to be focused upon by teachers for a better understanding of the autopoietic and allopoietic dichotomy.

8.0.5. The Concept of Transformation in Reading and Learning

In a learning situation, the probability of transformation is an important concept to consider. Humans and texts cannot be perceived as systems that are "closed" because each is always participating with the other in other "open" systems--the schools, the society, the world--and knowledge of one system will only give further input into other systems. All this knowledge put together will then evolve into another form of knowledge. Knowledge, in this sense then, is self-corrective, and like a cybernetic system of constant feedback, it continues to change and continues to improve. So, a model of text will include language systems only as a subset. The larger part will entail the notion of an ongoing interaction between the readers, their thoughts, other systems, and the empirical signs that they use.

Thus, in the context of reading and writing in an academic environment, transformation is also an ongoing process. When students read, the product of their reading will, undoubtedly, be the result of the process of that reading. Depending on the kinds of questions posed to them after this reading activity, the kind and amount of information given will also vary dramatically.

However, many people still hold to the view that education is the best way of making children memorize all the facts they need to know for use in their adult lives. Many educators are convinced of the necessity of permanent education: society evolves so rapidly that those interested in gaining knowledge must continually be studying in order to be able to cope with the latest developments. But educators cannot demand that people remain at school during their entire life and "parrot" all the so-called knowledge being "taught" to them. They must, therefore, stimulate autonomous learning, i.e. without supervision or direct (exo-) "steering" by them. Such cognitive development, however, presupposes students' ability to find the relevant facts and rules, to organize them in a simple and coherent framework, and to apply this framework to concrete problems. It is this ability to find, organize, and apply facts to solve problems that should be developed within individual learners or else education is for naught.

In certain cultures, however, metaphorically speaking, a rather "closed" notion of education is still being

practiced. Where this happens, the culture permits the practice of subjects looking up to authority as the ultimate source of truth and information. In this form of "closed" system, teachers and other sources of information are seldom questioned for correctness and validity. The understanding is that these sources of information received their instructions from other teachers and books and that these books were written by learned men whose words were deemed infallible. In such a "closed" system, the concept of transformation cannot really take place and the nurturing of independent and critical thinkers rarely happens. And yet, in a fast developing world such as we live in now, personal independence and the ability to think critically is a weapon one must have in order to survive. This is what learning should be about and this is what educators should strive for in their own classrooms.

8.0.6. The Concept of Selection in Reading and Learning

Last, but not the least important, is the idea that humans, being intelligence systems, will select the kind and amount of information to be included in any particular task. This "selection" aspect was prominent the moment participants in this study interacted with text--the length of textual "structures" to be processed, the kind of information they "latched on" helped in their understanding of the text read, and the kind of elaborations done on each selected piece of information, differed

from participant to participant. Selection was also evident in their Retelling and Freewrite tasks. In Retelling, although the kinds of superordinates and subordinates retold remained the same, the manner they were retold differed. The same was true of their Freewrite product. No one participant had her choice of information replicated exactly by any other participant in this particular study although everyone would have read the same "Source Text" for input for the "New Text."

8.0.7. How Are Concepts Related to Reading and Writing in the Malaysian Schools and Colleges?

Reading and writing is an important issue in the context of the Malaysian Secondary School English Language Curriculum. In Malaysia, the curriculum stipulates that at least an hour and a half (every fortnight) must be set aside for an English reading-comprehension class. These classes entail a lot of individual students reading aloud (to check for pronunciation), followed by silent reading after which students are required to answer more objective-type questions than WH-questions. The emphasis, therefore, is on how much was understood. There is no critical assessment required of the text. In the (1978) revised curriculum, even the short precis writing is disregarded, and as such any extended writing connected to the passage (except for the question-answer exercise), is ignored.

This type of reading-comprehension practice lasts for at least five years, from Form One (Grade Seven) to Form Five (Grade Eleven). Students are encouraged to read but most teachers seldom invite criticisms, nor do they consciously teach their students how to use and connect information from the various passages or texts read in the reading-comprehension classes. The product of such an educational environment is manifested in the schools themselves and in various institutions of higher learning in the country. Since students have not been trained to consciously connect relevant information from other sources and to be able to cite where these sources come from, their oral and written repertoires seem to be deficient in strength and formal critical bravado.

Also, in many classroom situations, students tend to be quiet and reluctant to voice their opinions when required to. This is not to say that students in Malaysia are not critical. They are. They are also extremely intelligent, but because of their lack of critical acumen and ability, they may appear dull, unassuming, or lacking in self-assertion. The problem becomes more pronounced--not when students are in their own academic system (because to a certain extent the system perpetuates that passiveness through the various national examinations which make use of Yes-No or objective-type questions)--but when they enter another academic community where one cannot be passive and where one's ability to be critical is

highly regarded. Some of these students may learn to adapt to the new demands but others may not, and unless the new environment understands the handicap that they have, they may not do as well as they could.

Critical thinking and the ability to document, therefore, constitute an academic prowess students must learn to acquire. Some of that can be done in schools and it can be done through reading. As has been observed in this set of participants' Think-Aloud protocols, the ability to criticize is present in some of them. Elements of criticism were found in a few of the Think-Aloud protocols, but these were never voiced in either the Retelling or Freewrite. Elements of intertextuality were also absent in all participants' task response (except for one from the Think-Aloud protocol). For the participants in this study, it was alright to disagree and to criticize privately, but not publicly. In this respect then, their "learning" history (in the sense alluded to by Dubois and Goddart, 1986) did not allow them to be critical of what they had read eventhough they were already at the tertiary level; that is, in a setting where critical thinking is very much expected and valued.

The importance of the implications of this study for teachers in Malaysia who have to deal with teaching reading and writing in schools and other institutions of higher learning cannot be overemphasized.

Conclusion

In many learning situations, educators tend to forget that their students are also autonomous beings, that they can also be critical, and that they differ in the way they perceive, process, and assimilate information. The students' store of semantic and episodic memories also differs from that of their teachers. Their experiences differ and so their choice and selection of information that they understand will also differ. However, when the instruments used to elicit their learning capabilities do not try to take into account these differences, frustration can occur. Misjudgements about "system" capabilities on the part of the teachers can also occur. The emphasis, therefore, should be on a better understanding of the nature of "autopoiesis" and "allopoiesis" and the concept of "open" as opposed to "closed" systems in all aspects of education and in the people involved in the education system.

Suggestions for Further Research

This method of study, where different cognitive strategies are accessed for various activities but from a particular perspective, is time-consuming and can be tedious. Yet, it is an important method of trying to understand processes that involve human cognition. The use of these mixed-methods of data gathering should be carried

out not only in reading research but also in other areas of study. In writing, for example, there is a need to see if strategies differ when the product is to be used for a talk, for an audience of different age groups, or for a class or non-class assignment. The need to better understand the performer rather than the performance is still lacking in many areas of study. Gradman and Hanania (1991), for example, have found that a mixed-method of data gathering proved to be a better system for understanding how non-native learners at the Indiana University CELT (Center for English Language Training) program learn English. This should not be a surprise since much emphasis in testing second language ability has always been on the product and not on the process. To a certain extent, we are still bound by the stimulus-response paradigm: "Let's tell the students to do something and we'll see what they have to offer. The product of their performance should be able to inform us what they know and that in turn should also tell us how much they have understood and learned."

As has been shown in this study, different methods of elicitation provide different kinds of information. To conclude that we know everything about anything from just one perspective is akin to saying that each blind man was right in his assessment of what an elephant should be. Similarly, to say that all the participants in this study have accepted everything mentioned in the texts through their Retelling is to ignore the presence of personal

"biases," "disbeliefs," and "sarcasms" in their Think-Aloud protocols. And to say that all that they know is mirrored in their Retelling is again to ignore the presence of new text content included in their Freewrite. In other words, there is so much to know about the human mind that no two methods of information elicitation is sufficient to understand it.

REFERENCES

- Adams, M. J. & Collins, A. (1979). "A Schema-Theoretic View of Reading." In R. O. Freedle (Ed.), New Directions in Discourse Processing. Norwood, N.J.: Ablex, 1-22.
- Afflerbach, P., and Johnston, P. (1984). "Research Methodology on the Use of Verbal reports in Reading Research." Journal of Reading Behavior. 16(2), 307-322.
- Anderson, J. R. (1976). Language, Memory, and Thought. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Armbruster, B., Echols & Brown, A. L. (1983). "The Role of Metacognition in Reading to Learn: A Developmental Perspective." (Reading Education Report No.40). Urbana-Champaign, ILL: Center for the Study of Reading.
- Ashby, W. R. (1956). An Introduction to Cybernetics. New York: John Wiley.
- Atkinson, R. C. & Shiffrin, R. M. (1968). "Human memory: A Proposed System and Its Control Processes." In K. W. Spence (Ed.), The Psychology of Learning and Motivation: Advances in Research and Theory, Vol.2, New York: Academic Press.
- Baddeley, A. (1986). Working Memory. New York: Oxford University Press.
- Baddeley, A. (1981). "The Cognitive Psychology of Everyday Life." British Journal of Psychology 72: 257-69.
- Baddeley, A. (1976). The Psychology of Memory. New York: Basic Books.
- Baker, L., & Brown, A. (1984). "Metacognitive Skills and Reading." In P. D. Pearson (Ed.), Handbook of Reading Research. New York: Longman. 353-394.
- Barthes, R. (1966). Critique et verite. Paris: Seuil.
- Beaugrande, R. de. (1980). Text, Discourse, and process. N.J.: Ablex.
- Bereiter, C., and Bird, M. (1985). "Use of Thinking Aloud in Identification and Teaching of Reading Comprehen-

- sion Strategies." Cognition and Instruction, 2(2), 131-156.
- Bertalanffy, L. von, (1962). "General System Theory: A Critical Review." General Systems, Yearbook of the Society for General Systems Research, 7: 1-20.
- Boulding, K. (1956). "General Systems Theory: The Skeleton of Science." Management Science, 2: 197-208.
- Bradford, A. N. (1983). "Cognitive Immaturity and Remedial College Writers." In J. N. Hayes, P. A. Roth, J. R. Ramsey, and R. D. Foulke (Eds.) The Writer's Mind: Writing as a Mode of Thinking. NCTE, Urbana: ILL. 15-24.
- Brewer, W. F. (1980). "Literary Theory, Rhetoric, and Stylistics: Implications for Psychology." In R. J. Spiro, B. C. Bruce, & W. F. Brewer (Eds.), Theoretical Issues in Reading Comprehension. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Britton, B. K. & Black, J. B. (1985). Understanding Expository Text. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Burton, A. & Radford, J. (Eds.) (1978). Thinking in Perspective: Critical Essays in the Study of Thought Processes. London: Methuen.
- Cavalcanti, M. C. (1987). "Investigating FL Reading Performance Through Pause Protocols." In C. Faerch, and G. Kasper (Eds.) Introspection in Second Language Research. Multilingual Matters Ltd., Clevedon, England. 96-112.
- Chandler, P. M., Mustapha, S. Z., Ono, N., & Torruella, C. (1989). "Exploring Retellings as Assessment: Insights and Patterns." Paper presented at the Annual Meeting of the National Reading Conference (39th, Austin, TX, November 28-December 2, 1989).
- Chomsky, N. (1957). Syntactic Structures. The Hague: Mouton.
- Cohen, A. (1984). "Studying Second Language Learning Strategies: How Do We Get the Information?" Applied Linguistics, 5: 101-112.
- Cohen, A., & Robbins, M. (1976). "Towards Assessing Interlanguage Performance: The Relationship Between Selected Errors, Learners' Characteristics, and Learners' Explanations." Language Learning, 26/1: 45-46

- Cohen, A. & Hosenfeld, C. (1981). "Some Uses of Mentalistic Data in Second Language Research." Language Learning, 26: 45-66.
- Craik, F. I. M. & Lockhart, R. S. (1972). "Levels of Processing: A Framework for Memory Research." Journal of Verbal Learning and Verbal Behavior, 11: 671-684.
- Culler, J. (1975). Structuralist Poetics. Cornell Uni. Press.
- Dechert, H. W. (1987). "Analysing Language Processing Through Verbal Protocols." In C. Faerch, and G. Kasper (Eds.), Introspection in Second Language Research. Multilingual Matters Ltd., Clevedon, England. 96-112.
- Dechert, H. W., & Sandrock, U. (1984). "Thinking Aloud Protocols: The Decomposition of Language Processing." Paper presented at the 3rd Colchester Second Language Acquisition Workshop. University of Essex, Colchester England.
- Dennett, D.C. (1978). Brainstorms. Montgomery, Vt.: Bradford.
- Emig, J. (1983). The Web of Meaning: Essays on Writing, Teaching, Learning, and Thinking. Edited by D. Goswami and M. Butler. Montclair, N.J.: Boynton/Cook Publishers.
- Ericsson, A. K. & Simon, H. A. (1980). "Verbal Reports as Data." Psychological Review, 87: 215-251.
- Faerch, C. & Kasper, G. (1987). Introspection in Second Language Research. Clevedon, Avon; Philadelphia: Multilingual Matters.
- Feigenbaum, E. and Feldman, J. (Eds.). 1963. Computers and Thought. New York: McGraw Hill.
- Flavell, J. H. and Wellman, H. M. (1977). "Metamemory". In R. V. Kail, Jr. and J. W. Hagen (Eds.), Perspectives on the Development of Memory and Cognition. Hillsdale, N.J.: Erlbaum.
- Flower, L. (1987). "Interpretive Acts: Cognition and the Construction of Discourse." To appear in Poetics, 16, 1987.
- Flower, L. (1987). Problem-Solving Strategies for Writing. 2nd. Edition. San Diego: Harcourt Brace Jovanovich.

- Flower, L. (1990). Reading-To-Write: Exploring a Cognitive and Social Process. New York: Oxford University Press.
- Flower, L., & Hayes, J. R. (1984). "Images, Plans, and Prose: The Representation of Meaning in Writing." Written Communication 1(1): 120-160.
- Flower, L., & Hayes, J. (1979). "A Process Model of Composition Document Design project." NIE #400-78-0043. Carnegie-Mellon University, Pittsburg, PA.
- Flower, L., & Hayes, J. (1980). "The Dynamics of Composing: Making Plans and Juggling Constraints". In Gregg, and Steinberg (Eds.), Cognitive Processes in Writing. Hillsdale, N.J.: Lawrence Erlbaum Associates, 31-50.
- Garner, W. R. (1987). Metacognition and Reading Comprehension. Norwood, N.J.: Ablex Publishing Corporation.
- Garner, W. R. (1962) Uncertainty and Structure as Psychological Concepts. New York: Wiley.
- Gerloff, P. A. (1985). "From the Inside Out: Using Talk-Aloud Protocols To Assess Second Language Learner Translation Processing." Unpublished Qualifying Paper, Harvard Graduate School of Education.
- Gradman, H. L. & Hanania, E. (1991). "Language Learning Background Factors and ESL Proficiency." The Modern Language Journal, 75 i (1991).
- Graesser, A. C. (1981). Prose Comprehension Beyond the Word. New York: Springer-Verlag.
- Greimas, A. J. (1966). Semantique, Structurale: Recherches de Methode. Paris: Larousse.
- Hayes, J., and Flower, L. (1980). "Identifying the Organization of Writing processes." In L. Gregg and E. Steinberg (Eds.), Cognitive processes in Writing. Hillsdale, N.J.: Erlbaum Associates, 3-30.
- Harste, J. C., Short, K., and Burke, C. (1988). Creating Classrooms for Authors: The Reading-Writing Connection. Portsmouth, NH: Heinemann
- Harste, J. C. and Stephens, D. (Eds.) (1985). Toward Practical Theory: A State of Practice Assessment of Reading Comprehension Instruction. Final Report, Vol. II. Language Education Department, Indiana University.

- Harste, J. C. and Carey, R. F. (1979). "New Perspectives on Comprehension." Monographs in Language and Reading Studies; ISSN 0193-4740 no. 3).
- Harste, J. C. & Burke, C. L. (1978). "Toward a Socio-Psycholinguistic Model of Reading Comprehension." In Viewpoints in Teaching and Learning, 45:3, 9-34.
- Harste, J. C. & Burke, C. L. (1977). "A New Hypothesis for Reading Teacher Education Research: Both the Teaching and Learning of Reading are Theoretically Based." In P. D. Pearson (Ed.), Reading: Research, Theory, and Practice. 26th. Yearbook of the National Reading Conference, Mason Publishing Company.
- Harste, J. C. (1989). "New Policy Guidelines for Reading - Connecting Research and Practice." Illinois: ERIC Clearinghouse on Reading and Communication Skills.
- Harste, J. C. (1988). "What it Means to be Strategic: Good Readers as Informants." Reading-Lectura-Canada, 6:1, 28-36.
- Hartmann, N. (1953). Aesthetik. Berlin.
- Heath, S. B. (1982). "Protean Shapes in Literacy Events: Ever shifting Oral and Literate Traditions." In D. Tennen (Ed.), Spoken and Written Language: Exploring Orality and Literacy. Norwood, NJ: Ablex, 91-117.
- Heath, S. B. (1983). Ways with Words: Language, Life, and Work in Communities and Classrooms. Cambridge University Press.
- Hidi, S., and Anderson, V. (1986). "Producing Written Summaries: Task demands, Cognitive Operations, and Implications for Instruction." Review of Educational Research, 56: 473-493.
- Holmes, J. A. (1953). The Substrata-Factor Theory of Reading. Berkeley, Calif.: California Book Company.
- Hosenfeld, C. (1977). "A Preliminary Investigation of the Reading Strategies of Successful and Non-Successful Second Language Learners." System, 5: 63-86.
- Hosenfeld, C. (1979). "Cindy: A Learner in Today's Foreign Language Classroom." Northeast Conference Reports. Northeast Conference on the Teaching of Foreign Languages, 53-75.
- Inhelder, B. & Piaget, J. (1958). The Growth of Logical Thinking: From Childhood to Adolescence. (A. Pearson & S. Milgram, Trans.). New York: Harper & Row.

- Javal, L. E. (1879). "Essai sur la Physiologie de lecture." Annales d'Oculistique, 82: 243-253.
- Just, M. A. & Carpenter, P. A. (1980). "A Theory of Reading: From Eye Fixations to Comprehension." Psychological Review, 87: 329-354.
- Kenyeres, A, & Kenyeres, E. (1938). "Comment une petite Hongroise apprend le Francais." Archives de Psychologie, 26/104: 332-366.
- Kintsch, W. & van Dijk, T. A. (1978). "Toward a Model of Text Comprehension and Production." Psychological Review, 85: 363-394.
- Krings, H. (1984). "The Translation Strategies of Advanced German Learners of French." Paper presented at the Symposium for Interlingual and Intercultural Communication: Discourse and Cognition in Translation and Second Language Acquisition Studies, Hamburg, F. R. Germany.
- Langer, J. A. (1984). "Effects of Topic Knowledge on the Quality and Coherence of Informational Writing." In A. Applebee, ed., Contexts for Learning to Write. Norwood, N.J.: Ablex.
- Lashley, K. S. (1951). "The Problem of Serial Order in Behavior." In L. A. Jeffress (Ed.), Cerebral Mechanisms in Behavior. New York: Wiley, 112-136.
- Lashley, K. S. (1950). "In Serach of the Engrams." In Symposia of the Society for Experimental Biology 4: 454-482.
- Latane, B., & Darnley, J. M. (1970). The Unresponsive Bystander: Why Doesn't He Help? New York: Appleton-Century-Crofts.
- Lorsch, W. (1984). "Linguistic Aspects of Translation Processes: Towards An Analysis of Translation Performance." Paper presented at the Symposium for Interlingual and Intercultural Communication Discourse: Discourse and Cognition in Translation and Second Language Acquisition Studies. Hamburg F. R. Germany.
- Maier, N. R. F. (1931). "Reasoning in Humans: II. The Solution of a Problem and Its Appearance in Consciousness." Journal of Comparative Psychology, 12: 181-194.

- Meyer, B. J. F. (1975). The organization of Prose and Its Effect Upon Memory. Amsterdam: North-Holland.
- Meyer, B. J. F. (1981). "Basic Research on Prose Comprehension: A Critical Review." In D. F. Fisher & C. W. Peters (Eds.), Comprehension and the Competent Reader: Inter-Speciality Perspectives. New York: Praeger.
- Meyer, B. J. F. (1985). "Prose Analysis: Purposes, Procedures, and Problems." In B. K. Britton and J. B. Black (Eds.) Understanding Expository Text. 11-52.
- Meyer, B. J. F. & Freedle, R. O. (1984). "The Effects of Different Discourse Types of Recall." American Educational Research Journal, 21: 121-143.
- Meyer, B. J. F., Brandt, D. M. & Bluth, G. J. (1985). "Use of Top-Level Structure in Text: Key for reading comprehension of ninth-grade students." Reading Research Quarterly, 16: 72-103.
- Miller, G. A. (1956). "the Magical Number Seven, Plus or Minus Two: Some Limits on Our Capacity for Processing Information," Psychological Review, 63: 81-97.
- Miller, J. R., & Kintsch, W. (1980). "Readability and Recall of Short Prose Passages: A theoretical analysis." Journal of Experimental Psychology: Human Learning and Memory, 6: 335-354.
- Minsky, M. L. (1977). "Frame-System Theory." In P. N. Johnson-Laird and P. C. Wason (Eds.), Thinking: Readings in Cognitive Science. Cambridge: Cambridge Uni. Press. 355-376.
- Mustapha, S. Z. (1988). "Schemata as a Reading Strategy." ERIC: ED295130, Indiana University, Bloomington. Indiana.
- Newell, A. (1980). "Harpy, Production Systems and Human Cognition." In R. Cole (Ed.), Perception and Production of Fluent Speech. Hillsdale, N.J.: Erlbaum
- Newell, A., Shaw, J.C., & Simon, H.A. (1958). "Elements of a Theory of Human Problem Solving." Psychological Review, 65: 151-66.
- Newell, A. & Simon, H. A. (1972). Human problem Solving. Englewood Cliffs, New York: Prentice-Hall.
- Nisbett, R. E. & Wilson, T. D. (1977). "Telling More Than We Can Know: Verbal Reports on Mental Processes." Psychological Review, 84: 231-259.

- Olshavsky, J. E. (1976-77). "Reading as Problem Solving: An Investigation of Strategies." Reading Research Quarterly, 12: 654-674.
- O'Malley, J. M., Russo, R. P., & Chamot, A. U. (1984). A Review of the Literature on Cognitive and Metacognitive Strategies in Second Language Learning. Rosslyn, Virginia InterAmerica Research Associates.
- O'Malley, J. M. & Chamot, A. U. (1990). Learning Strategies in Second Language Acquisition. New York: Cambridge University Press.
- Palincsar, A. S., & Brown, A. L. (1984). "Reciprocal Teaching of Comprehension-Fostering and Comprehension-Monitoring Activities." Cognition & Instruction, 1 (2), 117-175.
- Peirce, C. S. (1960). Collected Papers. In C. Hartshorne and P. Weiss (Eds.). The Belknap Press of Harvard University Press.
- Pressley, M. & Levin, J. R. (eds.) (1983). Cognitive Strategy Research: Educational Applications. New York: Springer-Verlag.
- Quillian, M. R. (1969). "The Teachable Language Comprehender: A Simulation Program and Theory of Language." Communication of the ACM, 12: 459-476.
- Reder, L. M. (1980). "The Role of Elaborations in the Comprehension and Retention of Prose: A Critical Review." Review of Educational Research, 50: 5-53.
- Rivers, W. M. (1979). "Learning a Sixth Language: An Adult Learner's Diary." Canadian Modern Language Review, 36/1: 67-82.
- Rosch, E. (1973). "Natural Categories." Cognitive Psychology, 4, 328-349.
- Rubin, J. (1981). "The Study of Cognitive Processes in Second Language Learning." Applied Linguistics, 2: 117-131.
- Rumelhart, D. E. & McClelland, J. L. (1986). Parallel Distributed Processing: Explorations in the Microstructures of Cognition. Vol. 1: Foundations. Cambridge, Mass: M.I.T. Press.
- Rumelhart, D. E. (1977a). "Toward an Interactive Model of Reading." In S. Dornic (Ed.), Attention and Performance. Hillsdale, N.J.: Lawrence Erlbaum Associates.

- Rumelhart, D. E. (1977b). Introduction to Human Information Processing. New York: Wiley.
- Salame, P. & Baddeley, A. D. (1982). "Disruption of Short-Term Memory by Unattended Speech: Implications for the Structure of Working Memory." Journal of Verbal Learning and Verbal Behavior, 21: 150-164.
- Sarig, G. (1985). "Comprehension of Academic Texts in the Mother Tongue and in a Foreign Language." Doctoral dissertation, Hebrew University of Jerusalem.
- Scardamalia, M. & Bereiter, C. (1984). "Development of Strategies in Text Processing." In H. Mandl, N. Stein, & T. Trebasso (Eds.), Learning and Comprehension of Text. Hillsdale, NJ: Erlbaum.
- Schumann, F., & Schumann, J. (1977). "Diary of a Language Learner: An introspective Study of Second Language Learning." In H. D. Brown (Ed.), On TESOL '77: Teaching English as a Second Language. Washington, D.C.: TESOL, 241-249.
- Selinger, H. W. (1983). "The Language Learner as a Linguist: Of Metaphors and Realities." Applied Linguistics, 4: 179-191.
- Smith, E. R., & Miller, F. S. (1978). "Limits on Perception of Cognitive Processes: A Reply to Nisbett and Wilson." Psychological Review, 85: 355-362.
- Smith, F. (1986). Understanding Reading - A Psycholinguistic Analysis of Reading and Learning to Read. Hillsdale, N.J.: Lawrence Erlbaum Associates Publishers.
- Sternglass, M. S. (1988). The Presence of Thought: Introspective Accounts of Reading and Writing. Vol. XXXIV. Norwood, N.J.: Ablex.
- Sternglass, M. S. (1983). Reading, Writing, and Reasoning. New York: Macmillan Publishing Co., Incorporated.
- Swaffar, J. K. (1985). "Reading Authentic Texts in a Foreign Language: A Cognitive Model." The Modern Language Journal, 69(1), 15-34.
- Thorndyke, P. W. (1977). "Cognitive Structures in Comprehension and Memory of Narrative Discourse." Cognitive Psychology, 9: 77-110.

- Tierney, R. J., & Pearson, D. P. (1984). "Toward a Composing Model of Reading." In J. M. Jensen (Ed.), Composing and Comprehending. Urbana, IL: ERIC Clearinghouse on Reading and Communication Skills, 33-45.
- Tierney, R. J., Readence, J. E., & Dishner, E. K. (1980). Reading Strategies and Practices: A Guide for Improving Instruction. Boston: Allyn and Bacon.
- Todorov, T. (1970). "Language and Literature." In R. Macksey and E. Donato (Eds.), The Structuralist Controversy: The Languages of Criticism and the Sciences of Man. Baltimore and London: John Hopkins Uni. Press.
- Tulving, E. (1985). "How Many Memory Systems Are There?" American Psychologist, 40: 385-398.
- van Dijk, T. (Ed.) (1976). Pragmatics of Language and Literature. Amsterdam: North Holland.
- Vico, G. (1725). The New Science. Third, revised translation. Edited by T. G. Bergin & M. H. Fisch. Ithaca and London: Cornell Uni. Press.
- Voss, J. F. & Bisanz, G. L. (1985). "Knowledge and the Processing of Expository Texts." In B. K. Britton and J. B. Black (Eds.), Understanding Expository Text. 173-187.
- Wenden, A. & Rubin, J. (1987). Learner Strategies in Language Learning. Englewood Cliffs, NY: Prentice/Hall International.
- Wertheimer, M. (1945). Productive Thinking. New York: Harper & Row.
- White, P. A. (1980). "Limitations on Verbal Reports of Internal Events: A Refutation of Nisbett and Wilson, and of Bem." Psychological Review, 87/1: 105-112.
- Wiener, N. (1948). Cybernetics, or Control and Communication in the animal and the Machine. Cambridge, Mass.: M.I.T. Press.
- Willshaw, D. (1981). "Holography, Associative Memory, and Inductive Generalization." In G. E. Hinton (Ed.), Parallel Models of Associative Memory. N.J.: Erlbaum, Hillsdale.
- Winograd, P. N. (1984). "Strategic Difficulties in Summarizing Texts." Reading Research Quarterly, 19, 292-300.

APPENDIX A

TEACHERS NETWORKING: The Whole Language Newsletter
Volume 1, Number 1. April 1987: pp.1, 10-11.

"Who Can Be A Whole Language Teacher?"
by Kenneth S. Goodman.

As I've traveled and spoken to teachers this year, I've been awed by how rapidly whole language has been gaining popularity in the United States. I've been having experiences like I had previously in Canada where whole language is becoming the dominant view. In Maine, 1500 teachers and administrators attended the Maine Reading Association, an almost totally whole language conference. In West Des Moines, Iowa, a "yuppie" community, they asked me to talk about whole language to parents. They decided last year not to adopt a basal. At home in Tucson, our TAWL group had one thousand people at a Saturday whole language conference to hear Don Graves. The Southwest Regional IRA conference had a number of strong whole language programs that attracted overflow crowds.

I've just finished editing the third edition of Language and Thinking in School. This has been an experience in *deja vu*. I worked on the first edition more than twenty years ago. It was interesting to me to see how much was still worth keeping and how much needed to be changed. I found I had to add a whole new chapter on teaching writ-

ing, that what was a chapter on reading theory now needed to be a chapter on reading and writing theory. But more than anything else the book needed to be revised to make its point of view less tentative. Research, theory, and practice have strongly supported the basic thesis of the book: that the school curriculum needs to be a dual curriculum that integrates language and thinking development with the development of knowledge. Furthermore, some things, like building spelling through writing and keeping the focus on meaning in reading have become so widely accepted that the sections dealing with those had to be revised to reflect current practice. In a very real sense the whole language grassroots movement shows that there is a much more sophisticated audience for the book than existed when we began the first edition. These whole language teachers are professionals who have a strong holistic belief system about teaching and learning and who recognize a need for a theoretical base to use in putting their beliefs into action.

But some people have raised doubts about the ability of American teachers to be successful with whole language. According to the Anderson Report:

It is noteworthy that these approaches (Whole Language) are used to teach children to read in New Zealand, the most literate country in the world, a country that experiences very low rates of reading failure.

However, studies of whole language approaches in the United States have produced results that are best characterized as inconsistent. In the hands of very skillful teachers, the results can be excellent. But

the average result is indifferent when compared to approaches typical in American classrooms, at least as gauged by performance on first and second-grade standardized reading achievement tests.

The only reference to this claim is the first grade studies reported in 1967, and that report indicated that the results for all methods examined in that study were inconsistent. None of the methods studied were anything that could be called whole language, though there was a language experience study. What is the most widely quoted finding of that study is that difference in teachers was more important than difference in materials.

But I've been thinking about what it could mean if it were true that New Zealand teachers can handle whole language teaching but American teachers can't. It's unclear whether Anderson would predict success or failure for Canadian, Australian, British or other teachers).

I decided there are these possible explanations:

1. New Zealand kids are so well equipped to learn that any teacher with any method could teach them to read.
2. All teachers in New Zealand are excellent teachers.
3. There is something about the climate, culture, diet, genes, or school system that makes whole language effective there but not in the United States. (perhaps it's the lanolin in sheep's wool, since there are about 20 sheep for every person in New Zealand.)

While not accepting that only exceptional teachers can teach whole language, let's consider if there is something about New Zealand schools that may explain the widespread successful use there of whole language.

New Zealand has a long uninterrupted history of progressive, child-centered education. A key figure was a director general of the Department of Education who was a firm believer of the philosophy of John Dewey. Set in the cement over the door of an elementary school in New Zealand, I once saw the words, "Learning by Doing, John Dewey." There is single school system for the whole country of New Zealand. Most current administrators and teachers grew up personally and professionally in this nurturing school philosophy.

The government in New Zealand publishes Ready to Read a series of small paperback books, each with a single story commissioned from a local author for use in their beginning reading instruction. That's as close to a basal reader as they get. Reading in Junior Classes, the book the New Zealand Department of Education provides for primary teachers to guide them in their teaching, is a concise and most practical statement of a methodology that incorporates new knowledge with the well-established progressive philosophy and recognizes the key role of teachers in translating this knowledge into practice in their schools. Perhaps, one day, if enough American

teachers take back control in their classrooms, this is what the basal manuals will look like.

In the introduction the New Zealand teachers' guide states its assumptions:

- . Reading programs should be child-centered.
- . Reading for meaning is paramount.
- . Reading must always be rewarding.
- . Children learn to read by reading.
- . Children learn best on books that have meaning and are rewarding.
- . The best approach to reading is a combination of approaches.
- . The best cure for reading failure is good first teaching.
- . The foundations for literacy are laid in the early years.

Later in the book they explain what they mean by "a combination of approaches." These include reading to kids, shared book experience (big books), language experience, writing, and reading small books. All of the methods are holistic. It's not surprising that whole language is not a widely used term in New Zealand. There's no non-holistic program to contrast it with.

Here's some more advice they give to teachers:

The essential strategies, understandings, and attitudes are learned best as children read texts which

have special meaning for them, which use their natural language, are not too difficult, and which they take a delight in reading.

And some further advice they give is:

Just parents and caring adults encourage children to acquire spoken language by taking risks, teachers should encourage children to take risks in their reading. Teachers should think of 'mistakes' as 'miscues' and, by accepting children's approximations, assist them in learning the techniques of confirmation and self-correction as aspects of self-improvement in reading. As the children gain the skill and confidence to regulate their own reading, they understand that taking risks and making miscues are a natural part of the reading process.

And at another point teachers get this advice:

Teachers can develop children's ability to sample, predict, confirm and self-correct while reading by drawing attention to appropriate cues. This should be done in ways which children themselves will take growing use of as they develop into independent readers. Skillful questioning and allowing plenty of time for children to work things out are essential.

So that's why whole language is successful in New Zealand! They've been at it longer and more consistently

than American teachers. And they get help and encouragement from their administrators and school authorities. They're not burdened by tests, minimal competencies, time on task schemes, skill hierarchies, basal readers, or effective teaching straight-jackets. Their administrators have faith in them as teachers and encourage them to have faith in kids as learners. They're all working together to help kids grow into literacy. It's not as risky to be a whole language teacher in New Zealand.

Then what about whole language teachers in the United States? Who are the whole language teachers and who can be a whole language teacher? Well, it's not hard to tell where Dick Anderson gets the notion that American teachers has to be outstanding to be a whole language teacher. Most whole language teachers are outstanding. In many cases they have decided to be whole language teachers in spite of the policies of their school authorities and their districts. They know the risks involved so they work extra hard at their jobs. They read a lot of the whole language professional literature so they can better understand why what they believe in works. That makes it possible to explain themselves and their teaching to parents, to administrators, and to their colleagues. They get together in teacher support groups to share their successes and failures and to learn from each other. And they are very willing to share what they've learned with their colleagues.

The enthusiasm, knowledge, and success of whole language teachers attract attention even from skeptical administrators and colleagues. They're invited to do staff development. They present at conferences. Other teachers ask permission to observe in their classrooms. They gain reputations as being teachers who want always to do what's best for their kids and aren't afraid to take responsibility for setting aside the basals and workbooks and forge out on their own with the kids. Whole language teachers accept responsibility but with it they expect power - authority to be the key decision maker in their classrooms.

In many cases what motivates an American teacher to move toward whole language is that they've become fed up with being told what to do. They can't be satisfied to follow a basal manual, to check off skills on an arbitrary wall chart, to teach for gain scores on tests. Whole language is contagious. It's spreading from teacher to teacher, from school to school, from district to district. That's because there are so many American teachers who are willing to learn, to innovate, and to take the risks necessary to become a professional teacher who makes a difference in the lives of kids.

APPENDIX B

TEACHERS NETWORKING: The Whole Language Newsletter Volume 9, Number 1. Fall 1988: pp.1, 10-12.

"Holistic Ways To Help Children At Risk Of Failure."
by Gay Su Pinnell

Can we see the reading process going wrong in the first years of school? That was the question Marie M. Clay asked when she began her research on young readers. The time must have been right. Almost simultaneously, and in different parts of the world, Clay (1979; 1982) and Kenneth Goodman (1975; 1986) began to look seriously at children's reading behavior and to analyse errors for clues to "in the head" processing. Clay was particularly interested in self-correction and other indications of children's independent reading. She then asked, "Can we intervene in the early stages of reading instruction to help children in jeopardy find the right path to literacy?"

The answer to both of those questions was "yes." Clay (1979) went on to design procedures, later called "Reading Recovery," to help young children at risk of failure in reading. We have piloted Reading Recovery in Ohio for the last four years. We have learned much about children, about our own teaching, and about changing systems to create new opportunities for children who are at risk of failure.

The Ohio Reading Recovery Project

The Ohio Reading recovery Project is a collaborative effort of the Ohio Department of Education, the Ohio State University, and school districts in Ohio that elect to participate. The Columbus Public School District was the first to pilot this intensive program for the lowest readers in first-grade classes. Its success led the Ohio legislature to fund a statewide pilot program in 1985-1986. (For further information, contact The Ohio State College of Education.)

Reading Recovery has had remarkable success in New Zealand, where, after an average of 12 to 14 weeks of individual daily intervention, young children learn to read. They continue to read at grade level with regular classroom instruction and need no further remediation. Three years later, those children retain their gains and continue to progress with their peers (Clay 1979; 1982).

The results of Reading Recovery in Ohio have also been promising. In the pilot study and in year 1, over two-thirds of the children reached average levels in reading and were successfully released from the program. Children from those two years have been followed and the evidence indicates that they have continued to make good progress in reading maintaining their gains two years after participation in the program. With no further intervention, those successfully released ("discontinued") from the program have maintained average progress. The program

is now in its third year of statewide implementation. Last year, over 80% of Reading Recovery children were successfully discontinued (See Huck and Pinnell, 1985; Pinnell, et. al., 1986; Pinnell, 1985, DeFord, et. al., 1987; Lyons, et. al., 1987).

The Program For Children

The goal of the program is to help children develop an independent, self-generating system for reading, the kind that good readers have, so that they can keep on learning to read better as they gain experience. This program is consistent with the principle that children learn to read by reading (Smith, 1978). In Reading Recovery, the focus of reading is always on meaning. Each day, the child participates in a one-to-one intensive "lesson" guided by a teacher who is specially trained to help children develop strategies while they are engaged in meaningful reading and writing tasks.

During the 30-minute lesson, the child reads many "little" books and writes and reads a brief story or message. Instead of drills on isolated items, children are intensively engaged in meaningful experiences with written language. The lesson includes rereading familiar stories to build fluency and use strategies "on the run" like good readers do. Each day, the child is introduced to a new book, which will be read independently the next day. Every day, the teacher takes a "running record" of the child's

reading of the new book experienced the previous day. The running record gives the teacher a chance to record and analyze the reading behavior in great detail and to make hypotheses about the kinds of in-the-head strategies the child is using. While strategies cannot be directly measured or taught, the Reading Recovery teacher can use this specific evidence from close observation to guide decisions and responses to the child.

Every lesson also includes writing. The child composes a message or brief story and works collaboratively with the teacher to write it. This writing experience "slows down" the reading process, giving the child a chance to examine details of written language within a message that very strong meaning and language support. Stories children write are later used for reading.

Throughout the lesson, teacher/child interactions are conversational in nature. The teacher provides strong oral language support as a scaffold for the child's development of literacy. Within the general lesson framework, every child's program is different. For example, no child reads the same series of books. Teachers select from a list of over 300 books those which are partially suitable for the individual child. Of course, children write from their own experience or in response to books, and their written messages are uniquely their own. The words they construct are those they really want to use rather than a predetermined list of sight words or sounds. The child's program is

individually tailored in another subtle, yet powerful, way. Teachers adjust their moment-to-moment interactions with children to support the development of independent strategies for reading.

For example, Jamie read the text in figure I from Nick's Glasses (Cachemaille, 1983), a favorite book about a little boy who hunts for his glasses only to find he is wearing them.

Text:	Jamie's reading:
"Have you looked	✓ ✓ ✓
in your school bag?"	✓ ✓ ✓ ✓
said Dad.	✓ ✓
	= accurate reading

figure I

Then she hesitated, looked closely at the print, and said, "I thought that said 'Daddy' until I read it." Jamie was attending to the visual details of words, but she was doing so within the context of meaningful reading. And, since she had new glasses, Jamie was reading a text especially important to her.

On another occasion, Jamie was reading Sam's Mask (Cachemaille, 1983).

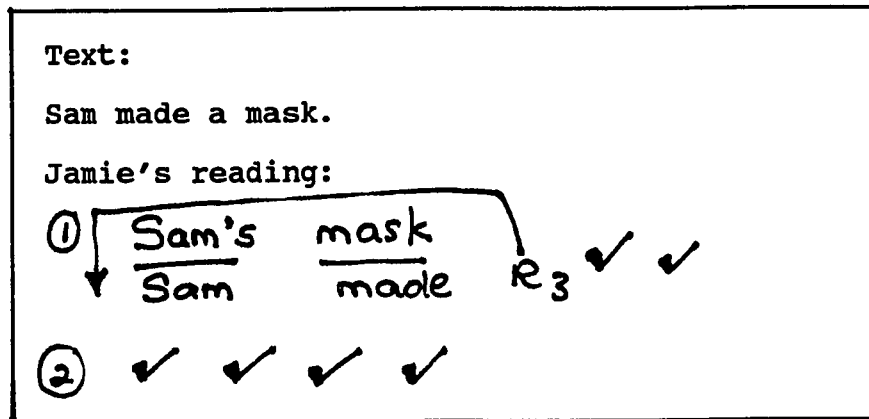


figure 2

Her three repetitions of the substitution, "Sam's mask" (see figure 2), indicated to the teacher that Jamie was aware of error. She was monitoring her own reading. Finally, she continued to the end of the sentence but hesitated, looking puzzled. Her teacher said, "What's wrong?"

"It doesn't make sense," Jamie said.

"You said 'Sam's. Could that first word be 'Sam's'?"

"No, because it doesn't make end in 's.' It's 'Sam.'!"

"Why don't you try that again and think what would make sense."

This time, Jamie read the sentence accurately and fluently, and her teacher said, "Great! You're really thinking about your reading." Jamie was monitoring and searching for meaning. She also showed that she could use visual information. The teacher supported the process but the child did the problem solving.

Professional Development For Teachers

How do teachers learn to work in these precise ways with children? The key component of the program is an intensive inservice course for teachers and a support system for implementing the program. Teachers meet in weekly seminars for an entire school year. Extensive use is made of a one-way glass for observation and analysis of lessons. A teacher demonstrates by teaching a child on one side of the glass. A sound system transmits what the teacher and child say to the other side of the glass where the rest of the teacher class observe. Guided by a trained teacher leader, the group of teachers talk while they observe the lesson. This interactive process helps them to become skillful at quickly analyzing the child's behavior and making the kind of inferences that guide teacher decisions. (See Clay, 1982; Pinnell, 1987).

Teacher leaders receive a year's training that includes clinical work, a theoretical seminar, and various internship experiences. The Reading Recovery teacher leader is prepared to implement the program as a systematic intervention that includes creating a network of support. A university-based team provides teacher leader training and gives continuing assistance to teacher leaders at the local sites. We currently have 23 state sites in Ohio and four sites outside the state. For the university team, the teacher leaders, and Reading Recovery

teachers, two components continue to exist even after the training year. First, they engage in professional development through continuing contact sessions and colleague visits. Second, everyone involved with the project - at all levels - continues to work daily with children. Becoming a leader or a university staff member does not mean losing the daily work with children that helps us to refine our knowledge and skills.

Implications For Classroom Teachers

For most children, Reading Recovery is not necessary, nor are these teaching techniques appropriate for classroom teaching. We can, however, learn from the success of Reading Recovery and draw some general principles for working with young children. We believe these to be sound suggestions that teachers can begin to implement without special training.

1. Increase observational power.

Reading Recovery teachers begin by using Clay's Diagnostic Survey. These individually applied assessments provide specific information about what children know about reading and writing. More important, though, teachers are expected to become sensitive observers of children's moment-by-moment responses. Reading Recovery teachers use a note-taking instrument and also record and analyze reading behavior using the running record to provide the information they need for decision making. In New Zealand,

classroom teacher use the running record as a regular part of assessment. This flexible tool, as well as procedures such as miscue analysis, can help teachers develop observational power and enable them to assess and make inferences "on the run" while children are actually engaged in reading and writing.

2. Create massive opportunities for children to read and write.

In Reading Recovery, children spend almost every minute writing or reading. In classrooms, children need wide and varied opportunities to engage with whole texts. Teachers can provide these opportunities by making time for children to write and read instead of "fill in the blank" or drill activities. For young children, the use of big books and shared writing techniques (see Reading in Junior Classes; see also, McKenzie, "Journey to Literacy") have greatly increased opportunities to behave as readers and writers. Children can produce their own writing, beginning with scribbles and invented forms, through journals, writing books, and combining writing with art activities. Extension activities through literature assist children in extending their understanding.

3. Provide high quality material.

A good primary classroom has hundreds of books that are available to children. The collection will contain many works of children's literature, of course, but for

children just beginning to read, there must also be many books they can handle themselves. Typical basal readers or controlled vocabulary books are not appropriate. The collection of "little" books, such as the Ready to Read series, are ideal for this purpose. They are easy books with some patterns. They are predictable but do not have stilted or artificial language.

4. Provide oral language support for literacy learning.

Children learn through using their own language. Throughout the Reading Recovery lesson, the teacher and child carry on a "conversation" that supports the child own efforts to construct meaning from written text. In the classroom, a wide range of oral language support is available. The activities mentioned above provide opportunities for children to engage in talk, extending understanding as they do so. Before, during, and after reading texts, teachers discuss them with children. The writing process is supported by talk. Adult/child talk and child/child talk perform different roles, both viable.

5. Invest in the professional development of teachers.

There is no substitute for the sensitive, informed teacher who can investigate, hypothesize, and make quality decisions about how to respond to each child, how to select and use materials, and how to design effective class activities. Teachers need continued professional development to support them in their work. This is best

accomplished not through "one sheet" consultants but through long-term, locally-based efforts. One powerful model is to involve small groups of teachers in their own research projects. Another option is for teachers to participate in local support groups. A third possibility is to attend professional conferences. Become active. Your growth as a professional will aid children in the regular classroom as well as Reading Recovery children.

APPENDIX C

DIRECTION A

THINK-ALLOUD TASK

1. You will be given an article to read. Read the article as if you were going to be tested on the information in it.
2. Read the article out loud but stop reading when you come to a red dot. At the dot, talk about what you are doing and thinking as you try to understand that sentence. I am interested in what you say to yourself as you read, what you are thinking about as you go along. If you have trouble understanding, I would like to hear about that, too--what you are doing and thinking to try to figure out what is puzzling you.
3. After you have read the first sentence and told what you are thinking, go on to the next sentence. Read it until you come to the next red dot and then talk about what you are doing and thinking. After a while, you will not find any more red dots marked on the article. In this case then, you will have to stop at places chosen by you, yourself. Please continue to think out loud at these points chosen by you. Continue reading and talking in the way you did before until you finish the article.
4. Read as though you are alone. This is like talking to yourself--thinking aloud. I will be outside manning the recording console but I will not interrupt you except to tell you when to stop so that I can change the cassette tape.
5. When you finish reading and thinking aloud, signal to me.

Thank you for your cooperation.

APPENDIX D

DIRECTION B

RETELLING TASK

You are given only 15 minutes to do steps 1, 2, and 3.

1. Read through the passage carefully once.
2. As you read, make notes of what you are reading in the margin or on a piece of paper.
3. Put the passage and your notes away.

For the next task, you are given only 5 minutes to do steps 4 and 5.

4. Select what you think are the key concepts (or main ideas) in the passage. Write each key concept on a piece of paper. You need not write in complete sentences but you need to write enough to remind you of the concept.
5. When you are done with writing your key concepts, signal to me. I will then come in and sit with you in the recording booth.
6. In your own words, tell me about the article that you have just read. You may look at your written key concepts when you do this.
7. I will tape this session that I have with you.

Thank you for your cooperation.

APPENDIX E

DIRECTION C

FREWRITE TASK

1. You are given only 30 minutes to do this.
2. In this session, what I would like you to do is write on what you have read. This is a writing task in which there is no fixed style to follow. You are the one to decide the way you wish to write it.
3. Discuss your reaction to the article as a whole or any specific points that you wish to elaborate on.
4. React to, rather than summarize, the article. Talk about how you see what the author has said relating to your past, present, and future situations and thinking.
5. Do not worry about spelling or revision. This should be treated as a rough draft piece of writing rather than a final product. Start writing and keep going in an uninterrupted fashion. Reread what you have written and structurally edit it, if necessary. Do not try to overly polish your language.

Thank you for your cooperation.

APPENDIX F

Sample of a Think-Aloud Protocol

Participant Number 8

Text Read: Pinnell, G. S. (Fall 1988). "Holistic ways to help children at risk of failure." Teachers Networking, 9:1, pp. 1, 10-12.

Reads: (1-4) Can we see the reading process going wrong in the first years of school? That was the question Marie M. Clay asked when she began her research on young readers.

"OK. That's fine. So, the research is done by this Mary M. Clay. Mary M. Clay asks...OK, Mary M. Clay."

Reads: (4-10) The time must have been right. Almost simultaneously and in different parts of the world, Clay (1979; 1982) and Kenneth Goodman (1975; 1986) began to look seriously at children's reading behavior and to analyze errors for clues to "in the head" processing.

"OK, 'in the head processing'. I am sure of this. 'In the head processing'. Must be a new term. I think I'll understand better as I go on. 'Head processing'."

Reads: (10-15) Clay was particularly interested in self correction and other indications of children's independent reading. She then asked, "Can we intervene in the early stages of reading instruction to help children in jeopardy find the right path to literacy?"

"So, there are two questions whereby the answers are provided here. So, I must find the answers. What, what is the question again? Let's see. First, it's 'clues in the head processing'. So, now the first question is to find

the clues...what goes on in the head. The second one is, 'Can we intervene in the early stages of reading instruction to our children?' So, there are two things happening to the children."

Reads: The answer to both of those questions was "yes."
(15-17).

"So, Clay sounds very convincing."

Reads: Clay (1979) went on to design procedures, later (17-19) called "Reading Recovery," to help young children at risk of failure in reading.

"So, now Clay designed a procedure which is called 'Reading Recovery.'"

Reads: We have piloted Reading Recovery in Ohio for the (19-24) last four years. We have learned much about children, about our own teaching, and about changing systems to create new opportunities for children who are at risk of failure.

"So, this Reading Recovery was done in Ohio. Fine. We understand that. Let's go on."

Reads: (25) The Ohio Reading Recovery Project.

"Now I must expect...The following passage will be about this project."

Reads: The Ohio Reading Recovery project is a collaborative effort of the Ohio Department of Education, (25-29) the Ohio State University, and school districts

in Ohio that elect to participate.

"OK. So there are various departments that participate in this project; the Ohio Education Department, the Ohio State University, and school districts in Ohio."

Reads: The Columbus Public School District was the first (29-32) to pilot this intensive program for the lowest readers in first-grade classes.

"OK. That's simple. So the...I must remember this; the Columbus Public School district...OK. The first pilot...the first district that piloted this project."

Reads: Its success led the Ohio legislature to fund a (29-34) statewide pilot program in 1985-1986.

"So, what I understand is that the program was a success in this Columbus Public School. (Reads Footnote: For further information contact the Ohio State University College of Education).

Reads: Reading Recovery has had remarkable success in (34-44) New Zealand, where, after an average of 12 to 14 weeks of individual daily intervention, young children learn to read. They continue to read at grade level with regular classroom instruction and need no further remediation. Three years later, those children retain their gains and continue to progress with their peers (Clay 1979; 1982).

"So, now it goes to New Zealand. I don't...I don't quite like this because now they are talking about another place, New Zealand. I got to change. I got to (x3) change my (x7) wave length of thinking from the States to New

Zealand. So, now it is more global. OK. I thought it should be more continuous. They should just say things in the States first and then later, maybe, go on. I don't know. I just go on."

Reads: The results of Reading Recovery in Ohio have also (44-46) been promising.

"So, now we go back to Ohio."

Reads: In the pilot study and in year 1, over two-thirds (46-53) of the children reached average levels in reading and were successfully released from the program. Children from those two years have been followed and the evidence indicates that they have continued to make good progress in reading, maintaining their gains two years after participation in the program.

"So, it was a success in Ohio...those who were involved in this program. OK. It is simple enough."

Reads: With no further intervention, those successfully (53-56) released ("discontinued") from the program have maintained average progress.

"OK. I think I'll read this again just to be sure."
(Rereads 49 - 53).

"So, what I gather is that they continue to see the progress of these children."
(Rereads 53 - 56).

"OK. So, they maintain average progress."

Reads: The program is now in its third year of statewide

(56-59) implementation. Last year, over 80% of Reading recovery children were successfully discontinued.

"So, it was a success and 80% were released from the program. 80%. OK. (Reads citation in parentheses: 59-61). OK. Now, it was a success and 80% have been discontinued or released from the program."

Reads: "The Program for Children." The goal of the (62-67) program is to help children develop an independent, self-generating system for reading, the kind that good readers have, so that they can keep on learning to read better as they gain experience.

"So, now we come to the goal; the goal of the whole program which was not mentioned before. So, [it] is to help children to develop self-generating system of reading. So, that means unguided reading...so to develop their interests. So, once these interests have been developed,...therefore, they will, you know, be self-motivated to go on learning. That's what I gather it is. OK."

Reads: This program is consistent with the principle (67-69) that children learn to read by reading (Smith, 1978).

"OK. By Smith. I am familiar with this Smith; when we did something about reading schemata. I think I've come across this guy. I think he did something; a work on schemata in reading. Smith, 1978. OK. What was it about Smith that we did last time? Smith ...that reading is -

something to do with your background knowledge; on reading and how it helps in, in understanding what you read better. Smith. Oh, ya, now I know. It is Frank Smith, 1978. OK. I am quite familiar with this guy Smith. OK, now."

Reads: In Reading Recovery, the focus of reading is (69-70) always on meaning.

"OK. Now, in that program, meaning is emphasized."
(Inaudible).

Reads: Each day the child participates in a one-to-one (70-75) intensive "lesson" guided by a teacher who is (omitted) trained to help children develop strategies while they are engaged in meaningful reading and writing tasks.

"So, that means each child [who] participates is given individual attention. OK."

Reads: During the 30-minute lesson, the child reads many (75-77) "little" books....

"What does it mean by "little books"? That it mean short passages or the size of the books? OK. I am not very sure, but I'll understand it more if I just go on reading."

Reads: During the 30-minute lesson, the child reads many (76-78) "little" books and writes and reads a brief story or message. (Rereads twice).

"Oh, that means it is a short passage then."

Reads: (78-80) Instead of drill on isolated items, children are intensively engaged in meaningful experiences with written language.

"So, I guess what it means here is that the passage; the written language or item given to the child, is normally given so that it is meaningful. I mean, related to their meaningful experiences. So again, when I read this I relate it back to Frank Smith; whereby Frank Smith stressed on the importance of, or the function of background knowledge to our new experience that we get. So, I guess Frank Smith is right here; when we have something new but it has a relation to our background knowledge, it will be useful and effective to help the child in the reading situation."

Reads: (80-83) The lesson includes rereading familiar stories to build fluency and use strategies "on the run" like good readers do.

"So, re-reading here, they relate that to skill. So, besides having something that is familiar to the child; that is familiar to their background knowledge, the skill or drilling factor is also put in here. I think re-reading familiar stories; that is, you relate your background knowledge. So, re-reading is a drill. OK."

Reads: (83-91) Each day, the child is introduced to a new book, which will be read independently the next day. Every day, the teacher takes a "running record" of the child's reading of the new book experi-

enced the previous day. The running record gives the teacher a chance to record and analyze the reading behavior in great detail and to make hypotheses about the kinds of in-the-head strategies the child is using.

"Oh, boy. This is a pretty long sentence and it will take... It is quite difficult to comprehend when it is very long like this. But, what I gather here is that, when the teacher gives the child something new to read--I mean besides the reading process, the teacher is also analyzing the behavior of the child when he or she is reading. So, now the teacher is studying the behavior."

Reads: (91-95) While strategies cannot be directly measured or taught the Reading Recovery teacher can use this specific evidence from close observation to guide decisions and responses to the child.

"What I understand here is that reading...reading strategies cannot be measured directly. So, the observation of the behavioral aspect of the learner, or child, is a great help for the teacher in this Recovery...Reading Recovery, to find the responses of the child. As the child reads, and his behavior is observed, that behavior will sort of show the teacher what the responses of the child are. OK."

Reads: (96-109) (100-108: Footnote) Every lesson also includes writing The child composes a message or brief story and works collaboratively with the teacher to write it. This writing experience "slows down" the reading process....

"So now, it sorts of tells us that when you read, you have just got to read. When you have something else to do, like writing, it slows the reading process."

Reads: (109-112) ...giving the child a chance to examine details of written language within a message that has very strong meaning and language support. Stories children write are later used for reading.

(Rereads 109 - 112).

"OK. So the child was given a chance to write as he reads and composes a message of this story and works collaboratively with the teacher to write it. So, as he reads and writes, he makes short notes. So, this writing process slows down the reading process; so that means, it gives the child the time to examine the details of the written language. So the language of what he reads will be written; so he will have more time to compare notes. OK., so that sort of gives the support to the child. And the stories children write are later used for reading. OK. So, that means when you read and write...somesort, writing will reinforce your understanding of what you read. That's what I understand by it. OK."

Reads: (113-116) Throughout the lessons, teacher/child interactions are conversational in nature. The teacher provides strong oral language support as a scaffold for the child's development of literacy.

"OK."

Reads: (116-121) Within the general lesson framework, every child's program is different. For example, no child reads the same series of books. Teachers select from a list of over 300 books those which are particularly suitable for the individual child.

"OK. Now, when the teacher gives language support, this will help the development of the child's literacy. Ya, ya. OK. So, just now, I understand that as you read and you write. So writing reinforce your understanding and comprehension of what you read. Now, when there is an oral support from the teacher, that will help the student better. So, that means reading can't be done alone. That's what I understand on reading. When you have other supports; like writing and oral support from the teacher, that will enforce further understanding. OK."

Reads: (121-124) Of course, children write from their own experience or in response to books, and their written messages are uniquely their own.

"OK. They are free. I mean, every one of them is different. So they are free to express what they understand."

Reads: (124-126) The words they construct are those they really want to use rather than a predetermined list of sight words or sounds.

"OK. So, that means words...they might use simple words instead of the words that are written in the passage. So, in a way, what the child is doing is re-writing

whatever they read in simple words and in what they understand."

Reads: (126-131) The child's program is individually tailored in another subtle, yet powerful way. Teachers adjust their moment-to-moment interactions with children to support the development of independent strategies for meaning.

"So I gather here is that besides giving them the chance to figure out, you know, on their own what they read, indirectly, the teacher is also monitoring their progress so that they will not stray from their work; but it is within the objective of the program. Ya, besides having their independence, they are also doing it within the objectives of the program...Well, to put it in a simpler way."

Reads: (131-135) For example, Jamie read the text in figure 1 from Nick's Glasses (Cachemaille, 1983), a favorite book about a little boy who hunts for his glasses only to find he is wearing them.

(Refers to Figure 1. Lines 136 - 141)

"OK, that's what Jamie read. OK. The title is Nick's Glasses. Simple one. OK, for example, "Have you looked?" Jamie's reading, "Yes" and "in your school bag"...Said dad... OK. quit reading. Now, I am not sure what this table is all about. I am not very familiar with this. OK. Think I will go on and maybe I will understand better."

Reads: Then she hesitated, looked closely at the

(142-146) print, and said, "I thought that said 'Daddy' until I read it." Jamie was attending to the visual details of words, but she was doing so within the context of meaningful reading.

"OK. She was concentrating on the visual details of words."

Reads: And since she had new glasses, Jamie was reading a text especially important to her.
(146-148)

"Oh, I see. So again, here, Jamie is given a text that is familiar to her. So, to relate her schema to this new item...so that Jamie will understand. So again, I gather that it is emphasized here that somehow your schema, or background knowledge is very important in understanding the new things you experience. OK."

Reads: On another occasion, Jamie was reading Sam's Mask (Cachemaille, 1983).
(149-154)

(Refers to Figure 2. Lines 151 -154).

"OK. So, the text said 'Sam made a mask.' So, Jamie's reading. So, this is what she jots down; 'Sam's mask.' OK, I am not very sure what this is all about. OK, never mind."

Reads: Her three repetitions of the substitution, "Sam's mask" (see Figure 2), indicated to the teacher that Jamie was aware of error. She was monitoring her own reading. Finally, she continued to the end of the sentence but hesitated, looking puzzled. Her teacher said, "What's wrong?" "It doesn't make sense," Jamie said.
(155-167) "You said 'Sam's.' Could the first word be

Sam's'?"

"No, because it doesn't end in 's.' It's Sam. '!"

"Why don't you try that again and think what would make sense."

"OK. So, now again this is just a continuation of what I have read where in this program...OK. Jamie is given a text where she is familiar with; to help her to comprehend better and there is a teacher to guide her, you know, when she is not sure of herself. So, this teacher will impose...will impose some questions. So, I guess this has something to do with me as a teacher whereby if I haven't used this emthod before...I think we should use this, maybe, in our teaching procedure...No, I have used, I have used articles that are related to their past experiences but I think I haven't tried this; where I ask or guide them in their reading. Normally, we just help them by giving them...I mean, I just give them passages that are familiar with but not helping so. Maybe this is a good try to do this. OK."

Reads: This time Jamie read the sentence accurately
(168-170) and fluently, and the teacher said, "Great!
You're really thinking about your reading."

"OK. Now, after the teacher has helped Jamie, you know, who was not sure of herself, she later could read it well. So, it did help Jamie. You know, this guy did learn from the teacher."

Reads: Jamie was monitoring and searching for meaning.
(170-174) She also showed that she could use visual information. The teacher supported the process but the child did the problem solving.

"So here...Now I think I understand this whole thing. Again, you know, that students; the learner, the reader, must be at her own liberty to read. You know, without direct...direct instruction of the teacher. But the teacher must, at the same time, guide her; just guide her. So, I think I can use this word 'facilitator' here. The teacher can act as facilitator, not as a commander. Just facilitate her reading. So, I think that will help her in finding the meaning to what she is reading; comprehending the passage."

Reads: (175) "Professional Development for Teachers."
(x2)

"So, now we go to a new topic."

Reads: How do teachers learn to work in these precise
(176-177) ways with children?

"OK. So, now we're looking at procedures."

Reads: The key component of the program is an
(177-180) intensive inservice course for teachers and a support system for implementing the program.

"OK. So, now this writer is trying to tell us that one way to help the teachers to carry out this program with children is to give in-service courses. OK. I am

familiar with this implementation and intensive in-service courses. I think we teachers here are quite familiar with this because we have to do this. We go through these in-service courses so that we will...so whatever we have gone...whatever is new for us will be introduced again in this in-service courses. OK."

Reads: Teachers meet in weekly seminars for an entire (180-181) school year.

"OK. This is done here in this country, anyway. OK. Iam familiar with this."

Reads: Extensive use is made of a one-way glass for (181-183) observation and analysis of lessons.

"OK. I am not very sure of this. (Rereads 181-183). Iam not very familiar with this. It just sounds like a mirror to me. I'll just make a guess. I think it is a mirror or something. It is not something...(Rereads "an extensive use of a one-way glass"). If it is made of a one-way glass,... Well, maybe, try and make a guess: it is like something where a reflection of what you do will be flashed back to you immediately."

Reads: A teacher demonstrates by teaching a child on (183-184) one side of the glass.

"OK."

Reads: A sound system transmits what the teacher and (184-187) child say to the other side of the glass where

the rest of the teacher class observe.

"Ok. Fine. So, I guess that means that whatever the teacher does...OK. I think my guess was right. Whatever the teacher does with the child will be, I mean, the others will get the feedback immediately. OK."

Reads: (187-189) Guided by a trained teacher leader, the group of teachers talk while they observe the lesson.

"I see. So, that means it is just like this place, this recording place, whereby a lesson is going on and you have other people on the next side of the glass; whereby these people can see what is going on and at the same time comment on what is going on. OK."

Reads: (189-192) This interactive process helps them to become skillful at quickly analyzing the child's behavior and making the kinds of inferences that guide teacher decisions. [193] (See Clay, 1982; Pinnell, 1987).

"So, as you observe the behavioral changes in the child, the others can immediately make responses or decisions whether to improve, or whatever, in the teaching strategies."

Reads: (194-195) Teacher leaders receive a year's training that includes clinical work,....

"OK. This is for the teacher leaders."

Reads: ...a theoretical seminar, and various
(195-196) internship experiences.

"OK. That means this is a training for the teacher leaders. That means they are the leaders who are the teachers in...That's what I understand."

Reads: The Reading Recovery teacher leader is prepared
(196-199) to implement the program as a systemic intervention that includes creating a network of support.

"OK. So, the teacher, the Reading Recovery teacher leader is prepared....So, the teacher is prepared to implement the program systematically. So, I think this key word is very important when I read this...."

(Rereads: 194 - 196).

"OK. Teacher leaders. That means these are the teachers, the teachers or the group of teachers that are trained to be leaders; to organize clinics, seminars, internship experiences and to help other groups of teachers. OK."

(Rereads: 196 -199).

"So, again, this word 'systemic' I think is very very important in this passage wherby it stress...it stresses that this whole program is probably monitored. That means whoever does this program have got to follow a system...a systematic program, so that the program will be...will be monitored stage by stage to reach the objective. So, here, I think the objective is important, but the process to

reach the objective is also very important here. That's why...that's why this word 'systemic'; to process step by step...process. OK."

Reads: A university-based team provides teacher leader (199-202) training and gives continuing assistance to teacher leaders at the local sites.

"So, here I gather that a team from the university who are more familiar with the program, or maybe, are the ones who designed this program for the teachers, are the ones who provide support to the teachers who are involved in this program."

Reads: We currently have 23 state sites in Ohio and (202-203) four sites outside the state.

"OK. This is pretty simple."

Reads: For the University team, the teacher leaders, (204-206) and Reading Recovery teachers, two components continue to exist even after the training year.

"OK. Now, I am very clear about this. So, we have the planners; or the people who planned the whole thing, the University team and the who trained this group of teachers who are the teacher leaders, who later trained this Reading Recovery teachers in turn. OK. There are three groups of people here."

(Rereads: '...two components continue to exist even after the training year.')

"That means after the traing year, this process still goes on."

Reads: First, they engage in professional development (207-209) through continuing contact sessions and colleague visits.

"OK. Fine. That means after the program, they do meet again through continuing contact sessions and colleague visits. So, they visit each other, maybe to compare notes, etc. OK. So, this I think...I'd like to recall here, whereby it was done in the States where I was teaching this program whereby the ministry people will teach the people from the Education Department. So, I think are the teacher leaders or, who, like the key personnels, will act as teacher leaders. These key personnels train teachers from schools all over the states and these key personnel will go from school to school, you know, to find their progress. So, this is...Well, I am quite familiar with this. OK. So, it goes on. It does not only go on in the States, but also here."

Reads: Second, everyone involved with the project--at (209-214) all levels--continue to work daily with children. Becoming a leader or a university staff member does not mean losing the daily work with children that helps us to refine our knowledge and skills.

"OK. I think that is quite simple; whereby wherever it is...whatever the category these people are, somehow it goes back to one criteria here. I think that is what I understand here; it is the basic needs of the learner; that is, the children. So, whether they are the planners,

the one who writes the courses, or the one who's involved in the classroom, it all boils down to the basic needs of the children. That means they will go on working with the children--the needs of the learners."

Reads: "Implication for Classroom Teachers". For most
(215-218) children, Reading Recovery is not necessary, nor are these teaching techniques appropriate for classroom teaching.

"OK. Fine. That means, not for everybody, here."

Reads: We can, however, learn from the success of
(218-221) Reading Recovery and draw some general principles for working with young children.

"That means that this Reading Recovery method or approach is not for everybody for, you know, we have different types of learners. So, maybe, it is for beginners; for those who just started reading, or remedial work for the weaker students."

Reads: We believe these to be sound suggestions that
(221-223) teachers can begin to implement without special training.

"Oh, boy. Now, these people.... These writers believe this to be a sound suggestion, teachers can begin to implement without special training. Ah, now it goes on to say that teachers can do without special training. Oh, I see; just by attending seminars, without formal training...special training, here. Maybe, I could relate this formal training...I might be wrong. OK, anyway."

(Rereads: 224, twice).

Reads: "1. Increase observational power. Reading
(224-229) Recovery teachers begin by using Clay's Diagnostic Survey. These individually applied assessment provide specific information about what children know about reading and writing.

"OK. First, it is assessment."

(Rereads: 226-227)

"So, that means, first, when you do this diagnostic survey, you want to find out,... Ah, again...you want to find out the background knowledge or what they know to give that individual assessment, OK."

Reads: More important, though teachers are expected to
(229-231) become sensitive observers of children's moment-by-moment responses.

"Again, here, it is just a continuity from what I have read."

(Rereads: 231)

"That means the stages, their behavioral changes that occur when they read. So, teacher is trying to diagnose their ability, or what they know from their behavior when they read. So, observation. OK."

Reads: Reading Recovery teachers use a note-taking
(231-235) instrument and also record and analyze reading behavior using the running record to provide the information they need for decision making.

"Ok. Now, they use an instrument. OK."

Reads: In New Zealand, classroom teachers use the running record as a regular part of assessment.
(235-237)

"I am not very sure of this 'running record'. What this is about. Anyway, the next passage will tell me what all this is about."

Reads: This flexible tool, as well as procedures such as miscue analysis....
(237-239)

"So, OK. This means that this tool, it's an approach or procedure called 'miscue analysis'...."

Reads: ...can help teachers develop observational power and enable them to assess and make inferences "on the run" while children are actually engaged in reading and writing.
(239-242)

"OK. By using this tool and by using an approach or procedure called 'miscue analysis', teacher will get on the spot...on the run; immediate feedback of the child's responses on what goes on in his mind, or knows his abilities, etc...while the child is still reading. OK. So, I think, this method is quite good. So, it's, you know, you don't have to give a test...the normal procedure. So, you implement another method; so the child is less conscious. So, when you give them a test; I mean to find out...to assess them, so they are more conscious. So, they will not give what they really know; give their true identity in reading. So,...OK."

Reads: "2. Create massive opportunity for children to
(243-244) read and write.

"OK. First is to increase observational power by the teacher. 'Create massive opportunities for children to read and write.' OK.. Now, children will have more opportunities to read nad write. OK. That means, here you give them more freedom, give the reader or child...."

Reads: In Reading Recovery, children spent almost
(245-246) every minute writing or reading.

"OK. They do that simultaneously; reading and writing. OK. hold on (x3). OK. I would like to recall something. I am reading "Reading Recovery children spend almost every minute reading and writing." I think, any college student who are studying are quite familiar with this. Somehow, it has helped me, you know, to comprehend better...when I read and jot down something, and write what I read. OK. So, that means, the Reading Recovery method...OK, this is done with the children. I am quite familiar with that."

Reads: In classrooms, children need wide opportunities
(246-248) to engage with whole texts.

"OK. The whole text."

Reads: Teachers can provide these opportunities by
(248-251) making time for children to write and read instead of "fill in the blank" or drill activities.

"OK, I agrre with this. As I have said earlier, this is much better than just to test, you know. Here, I think, this process is good because 'fill in the blanks' and drill activities, especially 'fill in the blank', is actually not a teaching process - to me, anyway. It is just an evaluation process. How can you have an evaluation process without a teaching process first. So, somehow, you have got to provide them with a learning process before you evaluate them. To 'fill in the blanks' is just an evaluation process. But if you give them, like this Reading Recovery method, you give them something to read that is familiar to them, well, in a way, they are learning something. Only after that, I think, we should give this 'fill in the blank' or whatever it is."

Reads: For young children, the use of big books and (251-252) shared writing techniques....

"Example, junior classes."

Reads: ...(see Reading in Junior Classes; see also (252-255) McKenzie, "Journeys to Literacy") have greatly increased opportunities to behave as readers and writers.

"OK. That means, as they read and write, we give them opportunities to become not only readers but also writers because they will write their own ideas. So, indirectly, we are also teaching them writing without the boring normal procedures; you know, of writing a passage, etc.,

etc.. This is more on free writing, but at the same time it is guided by the articles given. OK."

Reads: Children can produce their own writing,
(256-259) beginning with scribbles and invented forms,
through journals, writing books, and combining
writing with art activities.

"OK. That means, read and write; write their own ideas from what they know and what they read."

Reads: Extension activities through literature assist
(259-261) children in extending their understanding.

"OK."

(Rereads: 259-261)

"OK. That means that all the other activities that are mentioned...Ya, I do understand this. This is the gist of the whole thing here; whereby there are other ways to help a person understand, or a child understand what he reads. For example, by giving them the chance to write what they read, or a coaxing from the teachers instead of just normal reading.

"OK. So, the first one again. I want to remember. First, increase...this program, is to increase observational power, opportunities for children to read and write."

Reads: (262) "Provide high quality materias."

"The third one; to provide high quality materials."

Reads: A good primary classroom has hundreds of books
(263-264) that are available to children.

"OK. Simple enough."

Reads: The collection will contain many works of children's literature, of course, but for children just beginning to read, there must also be many books they can handle themselves.
(264-268)

"OK, ...they are familiar with."

Reads: Typical basal readers or controlled vocabulary books are not appropriate.
(268-269)

"OK. What do I understand by this?"

(Rereads: 268-269).

"That means they must give them a wide variety of reading material, not just what we as teachers think is appropriate for the children. We must give something, maybe, slightly above their level, their capability, so that it will motivate them in a way that they will find something new and they will want to know more about this new thing they find."

Reads: The collection of "little" books, such as the (270) (Lines 271 - 282 were not included in this Think-Aloud task).
(283) Ready to Read series, are ideal for this purpose.

"Oh, again, these little books. I am not very clear here. 'Little books'. Again, I presume it means short stories or short passages. Oh, so that means...I think so."

Reads: They are easy books with some patterns. They are
(284-286) predictable but do not have stilted or artificial language.

"OK. That means they are simple. That means whatever we give to them to read, whatever we select...Well, here I can recall. I can recall the syllabus design program that we do. That means, whatever syllabus, whatever we give to them, must be within their capabilities...still got artificial language. OK. So, that means, besides giving them a liberty, I mean, a wider, massive opportunity to read with new items, etc., we also get them to follow whatever syllabus that the place is...I mean, the objectives. It is within the objectives or within the goals of the teaching program.

Reads: "4. Provide oral language support for literacy
(287-293) learning." Children learn through using their own language. Throughout the Reading Recovery lesson, the teacher and child carry on a "conversation" that supports the child's own efforts to construct meaning from written text.

"Yes, I understand this. It is good. Here, besides just reading, the child is given opportunities to say... to say...to speak. So, here is another skill being introduced without drills, without the boring drilling...boring drills whereby the child can make their own efforts to say what they think the text is all about. So, they are forming their own sentences. OK. So, in a way, this conversation in the Reading Recovery lesson provides motivation; to motivate the child to feel free to speak. OK."

Reads: In the classroom, a wide range of oral language support is available.
(293-295)

"OK. That's simple. That means, you don't say something like the usual drill and let them follow, you know. I think, this is good. This is good specially for foreign language learners where the emphasis is on communicative approach. So here, when the child is given the chance to speak, the teacher interacts back. So, in a way, indirectly, we are...what do we say...we are doing that; that is, communicative syllabus. OK."

Reads: The activities mentioned above provide opportunities for children to engage in talk, extending understanding as they do so.
(295-297)

"Ya, OK."

Reads: (298) Before, during, and after reading texts....

"So, that means communicative process go on continuously. So, that means many things happen here; that means comprehending, communication. That means, the learner learns not to be inhibited, but to express themselves; so not only express their thoughts but also practice oral skills...practice the language orally. Practice...Ya. OK."

Reads: (299) ...teachers discuss them with children.

"OK. OK. Before reading and after reading text, teachers discuss them with children. So, here there is interaction, which is very, very important...I think is very important between a teacher and learner. Well, it has to be a two-way communication process. Ya, that brings me back...somehow, when I read this, it brings me back to my education courses whereby it says teaching procedure is, you know, you must have a source and you must have a recipient. So, it is only that way that learning procedure occurs...a learning process occurs; whereby the learner, sort of, the learner digest, get what the teacher is giving. OK."

Reads: The writing process is supported by talk.
(299-301) Adult/child talk and child/child talk perform different roles, both valuable.

(Rereads: 300-301).

"OK. This means that all these are available in reading, in comprehension, etc.. OK."

Reads: "5. Invest in the professional development of
(302-303) teachers.

"The fifth criteria in this program: 'Invest in the professional development of teachers.' OK. So, it helps to develop the teacher, themselves."

Reads: There is no substitute for the sensitive,
(304-308) informed teacher who can investigate, hypothesize, and make quality decisions about how to respond to each child, how to select and use materials, and how to design effective

class activities.

"OK. This is pretty long. let me read this again."

(Rereads: 304-308).

"OK. That means, help the teachers in this way. OK."

Reads: Teachers need continued professional develop-
(309-310) ment to support them in their work.

"OK, here. Ya, many people don't see this, maybe.

But, you know, teaching profession should not be a boring profession. It should somehow be freshened up on and off. So that means, teachers....

(Rereads: 309-310).

"So, that means teachers develop as the days go on.

So, that means this program...through continuous seminars and follow-up after that will help in the development of the teacher. So, teaching job should not be a boring job. I know after sometime, it can get boring, but if the teachers are enrolled in this program; where they meet other teachers and there is follow-up to their meetings and their progress is being shared by the others, somehow, of course, it will help in their personal development. I think this is so. OK."

Reads: This is best accomplished not through "one
(310-312) sheet" consultations but through long-term, locally-based efforts.

"Yes, I agree with this. Ya, this means, you know, especially the high authorities; the Ministry, maybe, not

just give directions that the teachers should do this, the teachers should do that but, you know. By having this sort of a program, you know, where you have the monitoring bodies, the...you know...the leaders, the teachers, and this continual meeting, somehow will help in the professional development of teachers. Well, I think our country is doing this and I find that to be very helpful and useful."

Reads: One powerful model is to involve small groups (313-314) of teachers in their own research projects.

"OK."

Reads: Another option is for teachers to participate (314-316) in local support groups.

"OK. Now, they are giving various suggestions; so either a group of teachers doing research projects.... OK, another is to participate in local support groups. So, that means.... What I gather here is that it does not involve a teacher to continuously go on with their own teaching procedure alone. That means, you must, on and off.... So, I...here...or see other people of the same traits. So, the emphasis is on group work."

Reads: A third possibility is to attend professional (316-319) conferences. Become active. Your growth as a professional will aid children in the regular classroom as well as Reading Recovery children.

"That means that it does not only help ordinary children but also in the remedial cases, children that need help. OK."

APPENDIX G

Sample of a RETELLING

Participant Number 8.

O.K. The central idea here is to find a way to help young readers, or beginners, to find their own self-motivated system of reading, as normally done by good readers. So here the author, Marie Clay, I think, is stressing in the first part of the article about reading here is not just oral reading. I think it is reading for understanding. That means she is trying to find out what goes on in the brain or mental process that goes on when a reader is reading.

In order to do that she creates or propose a program,...I can't remember, I think a Recovery Reading program. O.K. Sometimes, you do a Recovery Reading program. So she goes on to describe this program which involves a reader, a one-to-one contact; a reader and a teacher. So that means that the reader gets the personal attention from the teacher. So the reader here is normally for... Sorry.

So, the first supportive statement, the first support, Marie Clay and this person Kenneth Goodman, in defining reading as a mental process; that is asking a question to us the readers of the article, you know,

whether we can help the learners, to intervene the learners at an early stage with a program, a systematic program to help them to be better readers. So, if you go to this program--the Recovery Reading program--will have this one-to-one contact. The teacher is helping the learner first by selecting materials that are appropriate for the learners and then this method is a conversational method where the teacher is continuously, you know, supporting the students orally, as the learner reads. So it is a two-way process. O.K. that is all I remember.

O.K. so, so what's the program all about? This program has its...(inaudible)...in the whole or general program has the... (inaudible) where we have the support group. That is, for example given here is the university team, or maybe, the one who plans the program. Then we have the teacher leaders who are trained for one year by their involvement in seminars, clinics, etc. for one year. So they are trained to teach other teachers who will be conducting this program in the classrooms. The third in the... (inaudible)...is the Reading Recovery teachers who are in the classrooms. So they are the ones who are dealing directly with the children.

I will go back to the teacher leader program. Sorry.... Sorry, not that...the Recovery training teachers. O.K. they are not trained as teacher leaders, they are only doing that in... in-service courses. So they emphasize here the in-service courses where they got to

meet weekly, regularly, every week, to undergo this program. And excessive use of one-way mirror was used in this program where you have one teacher-leader with a learner and you have the rest of the Reading Recovery teachers in another room. So the reader can't see the teachers, but the teachers can see what goes on. O.K. So from there they have another teacher-leader here which continuously discuss with them what goes on in the next room. So from there they get feed-back and they really try to make the teachers understand what this program is all about.

So, after discussing that, this whole article went to the application of this program of the learner. So this program is good for the learner in a way. It will help the learner to better comprehend what they read. So, once at a basic level when they know how to comprehend what they read, they hope that this will continue to motivate them to go on reading. At the same time, the learner learn to use the language already as the teacher is there to communicate with them all the time. And thirdly, the learner use the language. They can use the language in the written form as support to what they read and what they do it orally with the teacher. So that means that they not only read, they can read orally, they can practice it in the written form. I think that is what language teaching is all about. So, indirectly, now the whole skills, you know--read, write, and speak--are being done. While the

learner is reading, so at the same time it gives the learner an opportunity to read widely because the teachers do select a variety of articles and books for the learners to read.

So, the last part of the article talks about the implication on the classroom teachers themselves. Here, one thing of importance is to improve the observational power. That means, normally, the teacher, in trying to reach the objective, fails to observe the progress of the student. You know, it needs practice to do that. So this is a kind of practice for the teachers to improve their observational power on the children...which is very important in the development of the learner. Only then we can monitor their progress. It is just by mere assessment, you know.

And, secondly, for a continuous professional development. O.K. I think I do agree with this, too. You know, you have to progress with whatever you do. So, these in-service courses, in a way, help them to progress; get new ideas, do new things, learn new things. O.K. And vary teaching methods, of course, instead of just drills, drills, drills, you do something new. And fourth, able to help weaker students who really need help because students here means the readers who didn't read as well as their peers. So this program from the article in, especially in Ohio and NZ has succeeded, it seems, in helping them to read better.

APPENDIX H

Sample of a Freewrite

Participant Number 8

Text Read: Gay Su Pinnell's "Holistic Ways to Help
Children at Risk of Failure."

The article clearly shows that reading is not just read aloud to practice pronunciation or dictation, but reading at the present trend is to read for comprehension, and also to create a systematic mental process in understanding what one reads. Gone are the days when reading was just pronouncing words or isolated structure drills of words and sentences.

I do agree with this new concept about reading that involves the reader himself working out how to read better in term of understanding. If a reader can read aloud well but doesn't understand what he is reading, then reading will just be a chore. But I guess through my own personal experiences, while I began to read, once one understands what one is reading, then automatically one is intrinsically motivated to read more and later to write one's thoughts so that the writing can be used for one's own personal reading or as messages to others.

The article also talks about a way or program whereby the teachers can play a part in helping weak or slow

readers to improve themselves so that they will progress together with their peers. This program emphasizes that the needs of the students have to be taken into consideration. I think again there is a change in the present trend of education which is learner-centered and not just to follow the likes of the teachers. Again, gone are the days when education was teacher-centered and just a one way process. The present learning process involved a two-way interaction between teachers and learners. Therefore, there is wholistic approach here whereby learning does not only involve reading but at the same time it also involves oral and writing efforts by the students and guided by the teachers. All skills such as reading, writing, speaking, and listening are no longer taught independently but can be naturally taught together at one time and more effectively. I guess this is what I understand by the 'wholistic' approach in teaching.

VITA

Sali Zaliha Mustapha was born in Perak, Malaysia. In 1982, she entered Indiana University, Bloomington, Indiana. She received the Bachelor of Arts degree in that institution in 1983. In the Fall of 1983, she began graduate study in Linguistics at the same university in Bloomington. In 1985, she received the Master of Arts degree. In September 1986, she entered the doctoral program in Linguistics, again at Indiana University.

During her four years in the Graduate School, she was initiated into two honors fraternities: Pi Lambda Theta and Phi Delta Kappa. She taught the first Bahasa Malaysia (the national language of Malaysia) course ever taught on the Bloomington campus in summer 1987. She also presented part of her dissertation work at the National Reading Conference held in Austin, Texas, in November, 1989. That paper along with another one that she wrote in 1988 can be found in ERIC. Both of them are cited in the references in this book.

Sali Zaliha Mustapha worked as a Student Affairs Consultant at the International center on the Bloomington campus for three years. From 1986 to 1991, she participated actively as a student orientation leader for new international students coming into Indiana University. She was a guest speaker at the Regional NAFSA (National Association for Foreign Students Affairs) Conference held in Indiana in 1988. She had a keen interest in and was one of the active participants in the Campus Girl Scout movement at Indiana University.

Sali Zaliha Mustapha received her Doctor of Philosophy degree in May 1991. She is now in Malaysia working at Universiti Pertanian Malaysia, Serdang, Selangor Darul Ehsan.