ABSTRACT
          This report examines the theory that when people
understand a text, they create a complex scenario (or model) within
which the events described might plausibly occur. In order to study
construction and revision of such models, five subjects were given
difficult-to-understand texts, and were later asked to discuss the
processing they went through to make sense of the text. The results
indicated that skilled readers use a variety of strategies for
revising and evaluating different models, finally converging on a
model that best accounts for the events described in the text.
Protocols are used to describe specific strategies used in
constructing an initial model of the text, revising the model, and
evaluating the model. The report concludes that pinpointing the
strategies that skilled readers use for dealing with difficulties in
understanding will help to specify the strategies which unskilled
readers must learn. (AA)

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INFERENCE IN TEXT UNDERSTANDING

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& Kathy M. Larkin

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INTRODUCTION

When people understand a text, they do not simply connect the events in the text into a sequential structure. Rather they seem to create a complex scenario or model within which the events described might plausibly occur (Bransford & Johnson, 1973). This model-based view suggests that we cannot characterize inference procedures solely in terms of finding connections between elements in a text. But it in turn raises a number of unanswered questions about how people understand texts. For example:

1. What precisely is meant by a model of the text?
2. How do people synthesize these models?
3. How do people revise their initial models?
4. Why do people select one model over another?

In order to study how people construct and revise models, we gave subjects five difficult-to-understand texts and recorded protocols of the processing they went through to make sense of the texts. The results indicated that skilled readers use a variety of strategies for revising and evaluating different models, finally converging on a model that best accounts for the events described in the text. These strategies concern the ways that skilled readers deal with the difficulties that arise in comprehension. By making these strategies explicit, we can possibly provide less skilled readers with strategies for what to do when they don't understand a text.

Text-Based vs. Model-Based Inference

Classically in cognitive psychology and artificial intelligence, inference is thought of as filling in the missing connections between the surface structure fragments of the text by recourse to context and knowledge about the world. This text-based view of inference stresses the notion that the inference process looks for meaningful relations between different propositions in the text. Such a view permeates semantic network theory (Quillian, 1969; Rumelhart, Lindsay & Norman, 1972), conceptual dependency theory (Schank, 1972; Rieger, 1975), demon-based approaches (Charniak, 1972) and cognitive psychology (Anderson & Bower, 1973; Frederiksen, 1975; Kintsch, 1974).

An alternative model-based view argues that a central purpose of inference is to synthesize an underlying model, which organizes and augments the surface structure fragments in the text. In this view, inference is controlled by a target structure that specifies the a priori constraints on the kind of model to be synthesized. This target structure acts as an organizational principle for guiding a set of inference procedures.

If this target is a non-generative structure, then this view is extremely similar to the view that the purpose of inference is to select and fill out a set of frames (Charniak, 1975; Minsky, 1975; Winograd, 1975) or scripts (Schank & Abelson, 1975; Lehnert, 1977) or schemas (Bobrow & Norman, 1977; Rumelhart & Ortony, 1977). If, however, the target is a generative structure, like a grammar, it can produce a potentially infinite number of possible models. In

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the latter case, the control exercised by the target structure is more subtle, requiring the growing of the target structure hand in hand with filling in the variables of the model (Bobrow, & Brown, 1975).

Methodology for studying model-based inference

We studied the four questions in the first section by reading five short, but difficult-to-understand passages to four different subjects. We recorded the subjects' protocols after they had heard the entire text. The subjects were asked to describe how they processed the text, whether they had any intermediate hypotheses along the way, whether they were satisfied or dissatisfied with any of these hypotheses, and why. Subjects could ask to have the text reread if they wanted. The texts ranged from a fragment of a mystery story to a recipe for an unspecified food. Analysis of these protocols suggests some initial answers to the questions listed above.

Two of the texts we used are given below. We will describe our theory of text understanding in terms of how two of the subjects dealt with these texts. At the same time we will try to point out other cases where the same phenomena occurred in other protocols. It will help the readers to think about and remember their own processing as they read these texts:

Window Text

He plunked down $5 at the window. She tried to give him $2.50, but he refused to take it. So when they got inside, she bought him a large bag of popcorn.

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Boating Text

John and Bill were sailing on Mystic Pond and they saw a
coffee can floating in the distance. Bill said, "Let's go
over and pick it up." When they reached it, John picked it
up. and looking inside said, "Wow, there are rocks in the
can." Bill said, "Oh, I guess somebody wanted the can to
float there."

Because the passages were difficult to understand, subjects
were able to give us valuable clues to their model-synthesis
process. Equally revealing were the unsatisfactory hypotheses that
people discarded along the way, and the reasons why they decided to
do so. The theory described below is our interpretation of the
processing revealed by these subjects' protocols.

A PROGRESSIVE-REFINEMENT THEORY OF TEXT UNDERSTANDING

Overview of the Theory

We will outline our theory briefly first. Then we will expand
each of these ideas in more detail. The theory states that text
understanding proceeds by progressive refinement from an initial
model to more and more refined models of the text. The target
structure guides the construction process, constraini the models
to the class of well-formed, goal-subgoal structures that means-ends
analysis (Newell & Simon, 1963) produces. The initial model is a
partial model, constructed from schemas triggered by the beginning
elements of the text. Successive models incorporate more and more
elements from the text. The models are progressively refined by

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trying to fill the unspecified variable slots in each model as it is constructed. As the questions associated with the unfilled slots in more refined models become more and more specific, the search for relevant information is constrained more and more. The overall process is one of constraint satisfaction (Fikes, 1970; Waltz, 1975).

The refinement process makes use of a variety of general-purpose problem solving strategies. These include rebinding a variable when its binding leads to a conflict, trying different variable bindings when there are a number of possible alternatives, questioning the bindings on other variables that lead either directly or indirectly to a conflict, questioning any default assumptions when there is a conflict and focusing on another part of the problem when you aren't getting anywhere. People pursue this refinement process until it converges on a solution that satisfies a number of conditions for a plausible model.

The Target Structure

The theory states that people try to understand the actions and events in a text in terms of characters applying means-ends analysis (Newell & Simon, 1963) to solve the problems that occur in the text. Means-ends analysis operates as follows: If there is a method to reach a goal directly and its preconditions are met, then apply that method. If the preconditions for the method are not met, then generate a subgoal to satisfy these preconditions. When a subgoal is generated, apply means-ends analysis recursively to reach that subgoal. If there is no way to satisfy the preconditions for that

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method, then look for another method that can be applied to reach that goal, etc. Means-ends analysis thus puts certain constraints on the permissible structures that interrelate events in the text. For example, a subgoal must be a means to satisfy the preconditions for a method applicable to a higher goal. Failures in trying to apply a method must lead to application of other possible methods for obtaining the same goal or a higher goal. But within these constraints there are still a potentially infinite set of plans or solutions to a problem depending on the particular subgoals and methods generated.

Story grammars (Mandler & Johnson, 1977; Rumelhart, 1975, 1977b) are an attempt to specify the class of well-formed target structures in the domain of stories. But the target structures for other domains pertinent to text understanding can also be characterized as goal-subgoal structures. For example, the recipe used in our study consists of a set of steps for mixing ingredients and then steps for cooking. Subjects attempted to understand the recipe by figuring out the overall goal of the recipe, from the set of subplans specified in the recipe. These target structures are a kind of tacit knowledge that guides people to make sense of texts in terms of goals and subgoals.

What is missing from story grammars, but is crucial to the way a target structure guides the construction of models is a notion of planning knowledge (Brown, Collins, & Harris, 1978). In the domain of stories this planning knowledge consists of knowledge about social goals and deltacts (i.e. acts to reduce differences between

present states and goal states), about specific methods for achieving particular deltacts, about the ordering cn these methods, and about the preconditions and results of each method (Abelson 1975; Schank & Abelson, 1977). This planning knowledge places enormous constraints on the way people construe stories; for example, giving somebody money is a method for getting that person to give you possession of something, but it is not a method for conveying information to them. In order to construct a model of the text, the comprehender must identify events in the story with different methods, figure out the goals that those methods are being used to achieve, identify whether those methods succeed or fail, bind successes to satisfy preconditions for higher goals, and relate failures to alternative plans to achieve the same higher goals. In the next section we will try to indicate how this planning knowledge is invoked in constructing a model of the window text.

Constructing an initial model of the text.

We can best illustrate the process by which subjects construct a model in terms of the window text, because this text almost always leads people down a false path. The protocol below shows the kind of mistake subjects make initially in interpreting this text.

When you said he plunked down $5 at the window, I thought he was at the racetrack, because I decided it was a betting window. The amount of money really didn't tell me anything. I didn't think the $5 was what you bet on a horse or anything like that, but somehow the window part

of it; I don't think of the movie theater as having a window, I think of it as a box office. And the only place I can think of as a window is a betting window. So I thought that was a racetrack.

So then when you said she, I thought that was the person behind the window. And when she tried to give him $2.50 back, I thought that was his change. When he said he wouldn't accept it, I started wondering. Because I can't imagine anyone not accepting his change from a bet at a horsetrack. If the next sentence had been something like he gave her $.50 because that had really been $3 instead of $2.50, then that whole hypothesis would have fit together. I prepared myself for that; I had that expectation that there was going to be some sort of exchange of how much the bet really was. I was trying to hang on to my original hypothesis which was that he was at a racetrack.

The second sentence was harder to integrate into that hypothesis, because it said that she tried to give him $2.50 back - it didn't say back, I guess. She tried to give him $2.50 but he refused. I was trying to integrate that into the racetrack hypothesis. And in order to do that, I had to believe that the $2.50 was his change and that he refused because it was the incorrect amount, but I was suspicious at that point, because that seemed a little strange; that didn't quite fit in.

Then when you said, when they got inside, I believe was the next sentence, I realized that I was wrong because there was no reason for him and the woman behind the window to be going anywhere together. I realized that the person he'd given the money to was not the same as "she" in the second sentence, and in fact they meant he and the "she" who had tried to give him the money, and suddenly I realized that she must have been his date, and it's hard to say if I really realized it at that point or at the point where you said, "so she bought a big bag of popcorn," or whatever the rest of it was. But then I had to reinterpret where the $2.50 had been coming from and it all made sense; it came from his date and she wanted to go dutch and he didn't, and so she bought the food when they got inside.

Here we see the phrase "he plunked $5 down at the window" very quickly triggers the idea of a racetrack bet. For other subjects, it triggered a bank window or a theater window. Thus many subjects apparently make a fast jump to a specific hypothesis that may or may not be correct (Rubin, 1975).

How does such a phrase converge on one of these hypotheses? What should be emphasized about this process is that the "racetrack-betting schema," "the theater-going schema," and "the bank-teller schema" all exist as prior knowledge structures for the subjects. (See Schank, et al. (1975) or Lehnert (1977) for descriptions of a restaurant-going schema, or Charniak (1975) for a

description of a grocery-store-going schema.) ' These schemas function as highly-constrained ,structures, which are competing.to fill their slots most successfully. This is a top-down process. Simultaneously the words in the text trigger a number of potential inferences. For example, $5 suggests the notion of buying or giving;, window suggests a house, office, car, bank, theater, or racetrack window. These inferences are the kind that text-based theories have been concerned with (see section on Text-Based vs. Model-Based Inference). This is a bottom-up process. The selection of a particular schema, such as the 'racetrack-betting schema, depends on the conjunction of these two processes (Adams & Collins, 1978; Rumelhart, 1977a; Rumelhart & Ortony, 1977).

In the protocol each new piece of data from the text was assimilated to the initial model in order to construct more refined models of the text. Thus the "she" in the second sentence was identified as the only other person necessary in the racetrack-betting schema (or the bank or theater-going schema), that is, the receiver of the money. When "she tried to give him $2.50," people understood this as "change" which can be a subschema in any of the three schemas people selected (though not so easily in the bank-teller schema). But the man's refusal of the $2.50 causes trouble for the notion of change; subjects try to explain the refusal as a result of wrong change, but this seems shaky to them because outright refusal is not the usual way to deal with wrong change. Such a model is in worse trouble when "they" get inside. It is possible for the person behind the window to go inside with the man but highly unlikely. Many subjects probably introduced a

third person at this point. But when she buys him popcorn, all the subjects abandoned this incorrect model and jumped to the notion of a date. Thus all the subjects drastically revised their initial models in order to accommodate them to the information in the text.

Figure 1 shows the top-level structure of the model the subject constructed while processing the fir   phrases of the window text. In a more complete representation of the model each box in the diagram would be expanded into its underlying semantic components (Schank, 1972; Norman & Rumelhart, 1975) and all the variable bindings (which are represented by arrows) would be shown. The arrows coming out of any box represent the variable slots in the schema for that concept (Norman & Rumelhart, 1975) These slots must be specified in the conceptual representation of any schema, such as putting, buying, or betting. We have represented unbound variables as pending questions in circles and bound variables as concepts in boxes. As the model develops over time, pending questions turn into bound variables.

The figure attempts to show the progressive stages of understanding and how these stages encompass the goals and intentions of the characters. The first stage consists of a set of pending questions that arise from the man putting down $5, such as "Who was he?", "Why did he do it?", "Where was he?" Many of these questions are answered as the subject's understanding progresses. The second stage reflects the notion that the man is putting down money toward the goal of buying something for which the money is payment. The third stage reflects the full notion that the man's goal is betting on a horse at a racetrack. At this point the subject has constructed an initial model of the text.
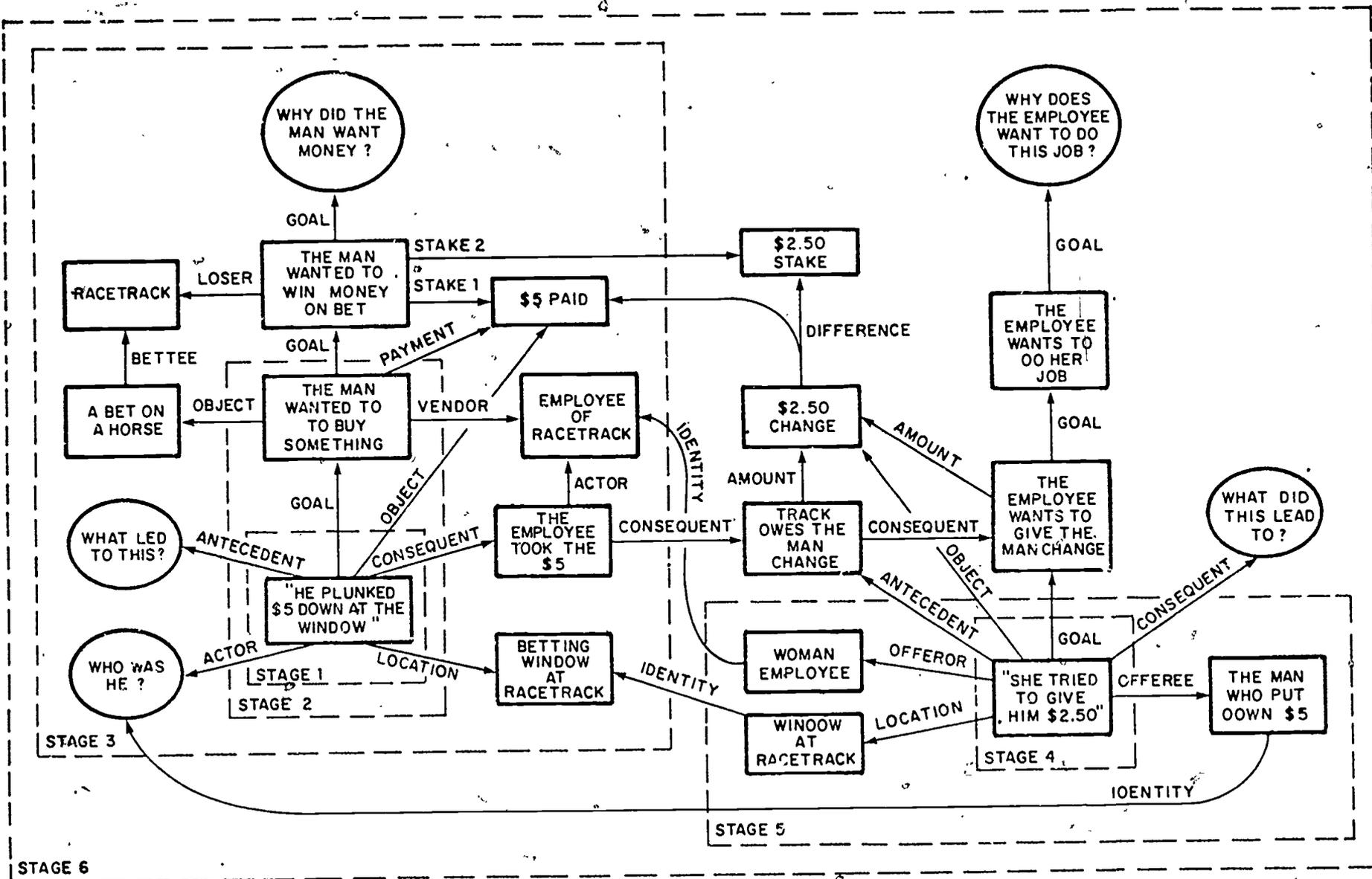
Figure 1. Stages in constructing a model

The next three stages show how new information is assimilated
to the initial model. Stage 4 again consists of a set of pending
questions about who tried to give whom $2.50, why they did it, and
how this event is connected with the first event. Stage 5 proposes
some tentative interrelations between the two events: "she" must be
the racetrack employee who received the $5, and "him" must be the
man who plunked down $5. In stage 6 the new information is fully
assimilated, by constructing a goal for the employee of returning
change to the man. This presupposes that the employee took the $5
and that the amount of the bet must have been $2.50. Thus the
initial model is modified slightly to change the betting stake from
$5 to $2.50. In general assimilation of new information is
accomplished by filling in intervening structures based on the
characters' goals and intentions, and making modifications to the
original structures where necessary.

Figure 2 shows how a model is restructured when new information
cannot be assimilated, as happened at the end of the window text.
The new structure preserves a few of the original bindings: the
plunking down $5 is still a "buying" event, the man who is offered
$2.50 is still the man who plunked down $5, and there is still an
employee who takes the $5. But most of the original bindings have
been abandoned: a new character (i.e., the man's date) has been
introduced, and it is she who offers the $2.50 in order to pay for
her own ticket to the movie. The process of rebinding all the
variables probably started with the introduction of this third
character. Each new binding led to other new bindings until the
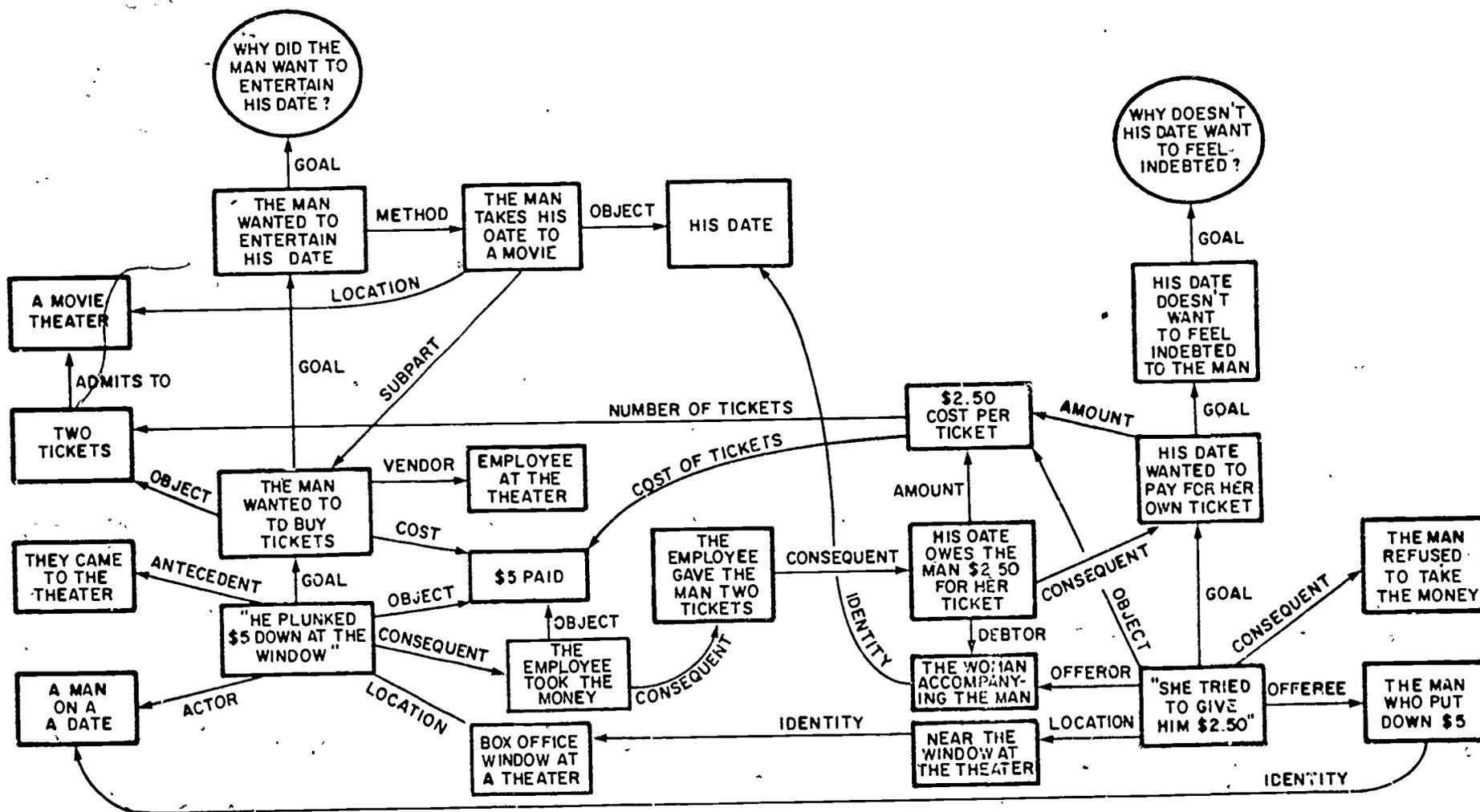
Figure 2. Restructured version of the partial model in Figure 1

model was completely restructured. However, the process occurred too quickly for the subject to describe; it is best seen in the next protocol where another subject was trying to make sense of the boating text.

The Questions Arising out of a Model

Any model the subject constructs raises a number of questions that the subject tries to answer. For example, in constructing a model for the window text, the subject considered the following questions: "Where were they?" "Why did the man plunk down $5?" "Who was the 'she' that tried to give him $2.50?" "Why did she try to give him $2.50?" "Why did he refuse the $2.50?" "Why did she go inside with him?" and "Why did she buy him popcorn?" Failure to answer any of the questions can lead to restructuring the model. Answering any of these questions leads to a more refined model, and puts additional constraints on the answers to the other questions.

These questions derive from the unfilled variable slots in the world knowledge schemas that are triggered by the understander's attempt to construct a coherent goal-subgoal structure. This is seen most clearly in a segment from a protocol on the boating text: "Well if it was an open can it might not float, if water got into it. Maybe if it was a closed can..." Here the subject is considering possible values for the "lid" variable in the "coffee can" schema. However, in most cases where the coffee can schema might be needed to understand a text, it would never lead to a question about the lid variable. Why does it in this text? The

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reason is that the lid-variable is crucial to finding a method for
the goal of keeping the can afloat, which is a basic problem that
arises out of the statement of the text. The subject eventually
decided the can was closed. By fixing the variable in this way, she
constrained the model in order to help her converge on a solution.

Sometimes questions arise out of the answers to other
questions. For example, one of the subjects given the boating text
was working on the question "What was the function of the rocks?"
In doing so he considered the possibility that the rocks were
lighter than water and that their function was displacement of
water. This solution led in turn to two kinds of questions: "Are
there lighter-than-water rocks?" and "What kept the rocks in the
can?" The existence of pumice answers the first question, but in
turn leads to questions such as "Would there be pumice around Mystic
Pond?" The second question can be answered in terms of a lid, but
this raises the question of "How does water get into the can for the
rocks to displace?" These examples show how binding a new schema to
a slot in order to answer one question can lead to other questions
about how that schema interacts with the rest of the model.
However, at some point the process must converge, because subjects
usually do find a model that is satisfactory to them.

Constraint Satisfaction

The process by which people converge on a model that answers
these questions involves constraint satisfaction (Bobrow & Brown,
1975; Fikes, 1970; Waltz, 1975). Constraint satisfaction occurs
frequently in human problem solving. For example, consider

cryptarithmetic problems, such as Fikes (1970) or Newell and Simon (1972) analyzed. The problem is to figure out how to assign the digits (0-9) to letters so that the addition is correct:

DONALD

+ <u>GERALD</u>

ROBERT

In this problem once the problem solver sees that E must be equal to 9 or 0, this constrains A to be either 4 or 5. To solve the problem, subjects make initial default assignments (such as E=9) and see if the constraints imposed by the assignments converge on a solution. Like means-ends analysis, constraint satisfaction is a pervasive part of cognitive processing.

Constraint satisfaction also arises in understanding scenes made up of toy blocks (Waltz, 1975). The problem is to identify the individual blocks making up the scene. In such scenes there are different patterns of edges that occur both at corners of blocks or where one block occludes another. The interpretation of one pattern is constrained by the interpretations of the adjacent patterns involving the same edges. In interpreting such scenes, the convergence time depends on the amount of ambiguity in the possible interpretations. As Winston (1977, p. 59) points out, if the process starts at the edge of a scene where there is less ambiguity, it converges much faster than if it starts in the middle of the scene. Similarly, if humans focus on the center of a scene, they find it much harder to identify the individual blocks, suggesting that human vision depends on a process like constraint satisfaction.

In understanding text, people try to answer the questions that arise out of the models they construct. When any question is answered, it constrains the solutions to other questions. Thus the bottom-up search for relevant information becomes more and more constrained as solutions to other questions are proposed. Sometimes the entire process converges too quickly for subjects to introspect about, as when the occurrence of "popcorn" caused a very fast restructuring of the answers to all the questions about the window text. Other times the process converges quite slowly as we will detail for the boating text. But we doubt that the slow convergence is a special case; rather we suspect it reveals the processing that occurs when disconfirming evidence as well as confirming evidence is encountered.

REVISING A MODEL

Problem Solving Strategies

In revising their model of a text, subjects bring to bear a variety of problem solving strategies. We can best describe these strategies in terms of their analogues in solving crossword puzzles. We have listed below some common strategies that people use to solve crossword puzzles. The column or row space where a word can be inserted in a puzzle is called a slot to emphasize its schema-theoretic correlate. In schema-theoretic terms the words inserted in the puzzle are the values assigned to variable slots.

1. If the word generated for a slot leads to a conflict, then generate a new word for that slot. (Rebinding)

2. If you cannot think of a word that satisfactorily fills a slot, then try to find another interpretation of the clue. (<u>Question Default Interpretation</u>)

3. If the word generated for a slot leads to a conflict with a crossing word, then question if that crossing word is correct. (<u>Question Direct Conflict</u>)

4. If the word generated for a slot leads to a conflict with a crossing word, then question the words that led to the selection of that crossing word. (<u>Question Indirect Conflict</u>)

5. If you cannot think of a word that satisfactorily fills a slot, then shift focus to find a crossing word to constrain the current slot. (<u>Near Shift of Focus</u>)

6. If you cannot think of a word that satisfactorily fills a slot, then shift focus to find a non-crossing word to constrain words crossing this word. (<u>Distant Shift of Focus</u>)

7. If there are a small set of possible words to fill a slot, try each one to see how they fit with possible crossing words. (<u>Case Analysis</u>)

8. If there are several possible words to fill a slot, tentatively try the most likely word. (<u>Most Likely Case Assignment</u>)

There are two aspects of these strategies we should explain. First, the two strategies we have referred to as "Indirect Conflict" and "Distant Shift of Focus" can be more or less indirect or distant. It depends on the number of steps between the new slot and the old slot in terms of crosswords. For example, a conflict or a shift can be one step removed to a slot that intersects a crossing word or two steps removed to a slot that intersects the one step

removed slo etc. A shift of focus of several steps is usually tried only when a whole area is causing difficulty. Second, what we have called "Question Default Interpretation" is tied to a whole set of strategies for most skilled crossword puzzlers. For example, one such strategy is to view the clue as a verb if you've been viewing it as a noun. But these strategies are highly domain specific and don't concern us here. What is important for our purposes is how the eight strategies listed above appear to be domain independent.

A Subject's Protocol for the Boating Text

Most of these problem solving strategies can be seen in the following protocol for the boating text. Because of the length of the protocol, we have extracted only the most relevant segments:

1) Well immediately it doesn't make sense. I mean a can with rocks wouldn't float. I am going back. Mystic Pond; I don't think that could be anything other than a regular, unless it's a fairy tale in which anything could happen. I'm wondering if there is any other kind of coffee can it could be other than the round ones I'm thinking of. And I was wondering if there was any other kind of rocks there could be except the usual ones.

2) Well I thought about halfway through maybe they were ice sailing, but that wouldn't make sense that a can with rocks would float on ice, so I don't think they were ice sailing. It could be such salty water that a can with rocks would float in it. I think there is such a one out in Salt Lake City.

3) Somebody wanted it to float, so they put rocks in it. Well if it was an open can, it might not float if water got into it. Maybe if it was a closed can and there was air in it, it would float, but if it was closed why would they put rocks in it. I mean if it was closed and there was air in it, it doesn't seem like you would need rocks to keep it afloat. I'm baffled.

4) No, I wouldn't settle on anything I've said; nothing I've said really explains it.

5) Well the can was either opened and then somebody closed it using a plastic lid or some other kind of lid, in which case if they didn't open it, then I don't see how they could have gotten the rocks into it, so they must have opened it.

6) Maybe they put in a few rocks. Maybe that would make it drift, not drift as far, but I don't know whether that's true or not. Well if something's heavier, it won't move as fast with the same amount of force applied to it, so maybe they put a few rocks in.

7) Yeah, it says float there, not just float, so maybe they put a few rocks in to keep it relatively stable and then the rest was filled with air. I think that's what I would settle on.

8) Well, I am assuming that there's currents, oh it's a pond. OK, I'm assuming that there's currents or wind. Well, there must have been some wind because they went sailing so maybe if it was light like a leaf it would get blown

all over the place because an empty coffee can would be
pretty light I would imagine. I think if they put a few
rocks in, though, it might not sink and that would weigh
it down a bit, so that it wouldn't get blown as far.
That's what I would guess.

The questions that this subject was trying to answer were
foremost "Why didn't the can sink?" and "What was the function of
the rocks?" Other subjects addressed different questions, as we
will show. The protocol shows abandonment of several answers to the
first question, then a solution to it, (there were only a few
rocks), and then a turning to the second question and a solution to
it, (the rocks functioned as an anchor). The subject did not, in
fact, arrive at the same solution as the one found by Bill in the
story. Bill's solution was that the rocks functioned as ballast to
keep the open can upright, and hence afloat. But the protocol does
illustrate most of the different kinds of problem solving strategies
that occur in the protocols collected.

Strategies in Revising a Model

The subjects were using the problem solving strategies listed
earlier in order to figure out the meaning of the texts. We will
give examples from the protocols of each of the strategies below:

Rebinding. The most common strategy seen in the protocols
(e.g., in Segments 2, 5, and 8 above) involves rebinding the current
slot. The strategy is simply: if a value that is bound to a
variable slot leads to a conflict, then try another binding for that

variable. A clear case of the subject rebinding a previous solution to the question "Why didn't the can sink?" occurs in the second fragment. There she adopted a high-density-of-water solution by considering the water as ice. But this solution produced an immediate conflict: that the coffee can was said to be floating. To patch this high-density solution, she thought of another way (salt water) that water could be dense enough to hold up a rock-filled can. In the fifth segment the subject considers the possibility that the can had never been opened. This leads to a conflict with the fact that the can had rocks in it, so the subject resumes the assumption that the can had been opened. In the eighth segment, there was a patch of the anchor solution where the subject abandoned the notion that the can was anchored against currents, and instead decided it was anchored against winds. Rebinding involves keeping most of the model constructed up to the present point, and changing only the last variable bound.

Figures 3 and 4 depict two of the attempts at rebinding by the subject: Figure 3 shows the unsuccessful attempt in segment 2, and Figure 4 shows the successful attempt in segment 8. In each case the model constructed in attempting to answer a particular question had an unbound slot that needed to be filled to make the model plausible. (We have depicted the models here as a metaphorical image that may not be too different from the kind of model people actually have.) A first attempt at binding the slot failed on the basis of the evaluation strategies described below. In Figure 3 the
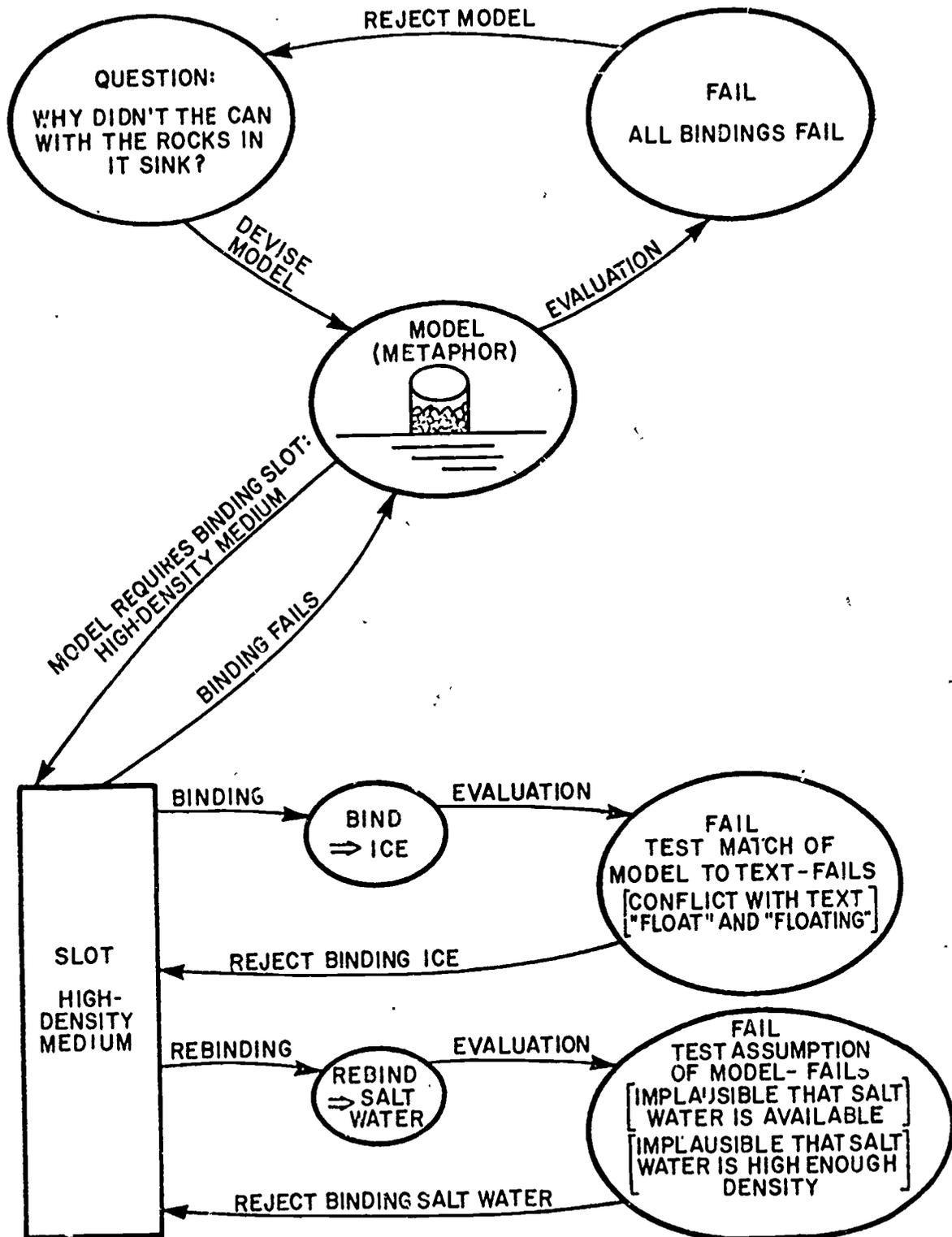
Figure 3. Rebinding the slot for a high-density medium
(protocol segment 2)

ACCEPT MODEL

QUESTION:
WHY WERE THE
ROCKS IN THE CAN?

SUCCEED
TEST ASSUMPTIONS
OF MODEL - SUCCEEDS
[LID ON TO KEEP ROCKS IN]
TEST CONSEQUENCES OF MODEL - SUCCEEDS
[ROCKS WOULD PROVIDE A PLAUSIBLY SUFFICIENT
ANCHOR AGAINST FORCE OF THE WIND]
TEST MATCH OF THE MODEL TO THE
TEXT — SUCCEEDS
["WANTED THE CAN TO FLOAT
THERE"]

DEVISE MODEL

MODEL
(METAPHOR)

EVALUATION

MODEL REQUIRES:
BINDING THE SLOT:
FORCE PUSHING THE CAN

FORCE PUSHING CAN ⇒ WIND

BINDING

BIND
⇒ CURRENT

EVALUATION

FAIL
TEST ASSUMPTIONS
OF MODEL - FAILS
[NO CURRENTS IN
A POND]

SLOT
FORCE
PUSHING
THE CAN

REJECT BINDING   CURRENT

REBINDING

REBIND
⇒ WIND

EVALUATION

SUCCEED
TEST ASSUMPTIONS
OF MODEL - SUCCEEDS
[PONDS CAN HAVE WINDS]
TEST INTERCONNECTEDNESS
OF MODEL - SUCCEEDS
[THEY WERE SAILING SO
THERE MUST BE WINDS]

ACCEPT BINDING   WIND

Figure 4.   ...ding the slot for the force pushing on the can
(protocol segment 8)

second binding also failed leading to abandonment of that particular model. In Figure 4, however, the rebinding succeeded and the subject decided that the entire model was plausible.

Questioning a Default Interpretation. When subjects are not getting anywhere, they often begin to question their default assumptions. This can be seen most clearly in the first segment, where the subject considered changing her initial default assumptions that a) this is the real world, b) it is a standard coffee can, and c) these are normal rocks. Some subjects elaborate these possibilities by creating a fairy tale where the lake is only a little pond and the can rests on the bottom, or by assuming the rocks are lighter than water and their function is displacement of water. This is an important problem solving strategy, because assuming the wrong default values can often prevent subjects from finding the correct solution, as happened to the subjects who decided the coffee can was closed.

Questioning a Direct or Indirect Conflict. The strategy of questioning a direct conflict can best be seen in the earlier protocol on the window text. There the subject had bound the "she" in the text as the person who received the money behind the window. However, when "she" went inside with the man, this led the subject to question her earlier binding of "she" to the person behind the window. This questioning of previous bindings is rather prevalent in dialogues.

Sometimes the questioning of a particular binding may only occur through a chain of inferences that are needed to support a particular binding. For example, one subject had decided the coffee can was covered with an air-tight plastic lid. This binding was made when he initially heard in the text that the coffee can was floating in the distance. Later when he was considering the question about the function of the rocks, he considered the possibility that the rocks were lighter than water (e.g. pumice) and their function was to displace water. In order to displace water, water had to be able to get into the can without the rocks getting out. This led the subject indirectly to question the earlier lid binding: what he needed was a leaky lid. Thus through a whole chain of bindings the subject was led to question a binding made much earlier.

Near or Distant Shift of Focus. Subjects in the protocols sometimes move from a question they can't solve to a different question. Often the new question is closely related to the old question. For example, between segment 2 and segment 3 of the protocol shown for the boating text, the subject changed the question she was addressing from "Why didn't the can sink?" to "What was the function of the rocks?" Then during segment 3 she changed to the related question "Was the can open or closed?". Another subject, when he wasn't getting anywhere with the question about the function of the rocks, considered the more distantly related question "What was the intention of the people who put the rocks in the can?" By addressing a different question when in trouble, the subject frees himself of some of the assumptions he's made in

constructing his current model. It gives the subject a new perspective by allowing him to start binding variables in a different part of the structure (see paragraph on Constraint Satisfaction in Vision).

The reason this strategy works is that the answer to one question constrains the answers to other questions. For example, the subject's solution in the sixth fragment that the can floated because there were only a few rocks, apparently suggested the anchor solution to the function question. Another subject, when he heard the ballast solution, answered the question about the intention of the people who put rocks in the can as follows: they must have been kids who wanted the can to float, and to prevent it from floating on its side, they put rocks in. Addressing different questions in order to constrain other variables helps the subject converge on a solution from a different angle.

Case Analysis and Most Likely Case Assignment. Often subjects make tentative assignments as a deliberate strategy to constrain the possible solutions so that the process will converge. Case analysis is the systematic consideration of all alternatives possible cases. This is what the subject did in the third segment, where she considered whether the can was open or closed. Then in segment 5 she elaborated her model by making several likely case assignments: that the can was closed, that a plastic lid was used, and that it was empty except for the rocks. But these were tentative assignments of variables; they were chosen only because they were the most plausible values. Hypothetical reasoning on cases (i.e.,

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choosing either the most likely case, or the case that might constrain the model the most) is a standard technique in constraint satisfaction. By pinning these variables down to their most likely values, the subject hoped to impose enough constraint so that the process would converge (see section on Constraint Satisfaction).

Figure 5 depicts the case analysis strategy used by the subject in segment 3. There the subject tried to bind the lid variable in order to constrain her model. The first binding failed but the second succeeded at the level of the particular slot it filled. However, the entire model failed, because it didn't answer the basic question about the function of the rocks. This illustrates how the evaluation strategies described below are applied at different levels in testing the plausibility of any model.

Evaluating the Model

The protocols showed that subjects evaluated a number of models while trying to make sense of the texts. There are a number of strategies they applied in order to evaluate the models, and these strategies are linked to the conditions they used to either accept or reject a model. The evaluation process is a complex one, but we think we can specify at least four different tests that subjects applied in evaluating the plausibility of the models they constructed. The evidence from all these tests appears to be weighed together in evaluating the plausibility of any model.
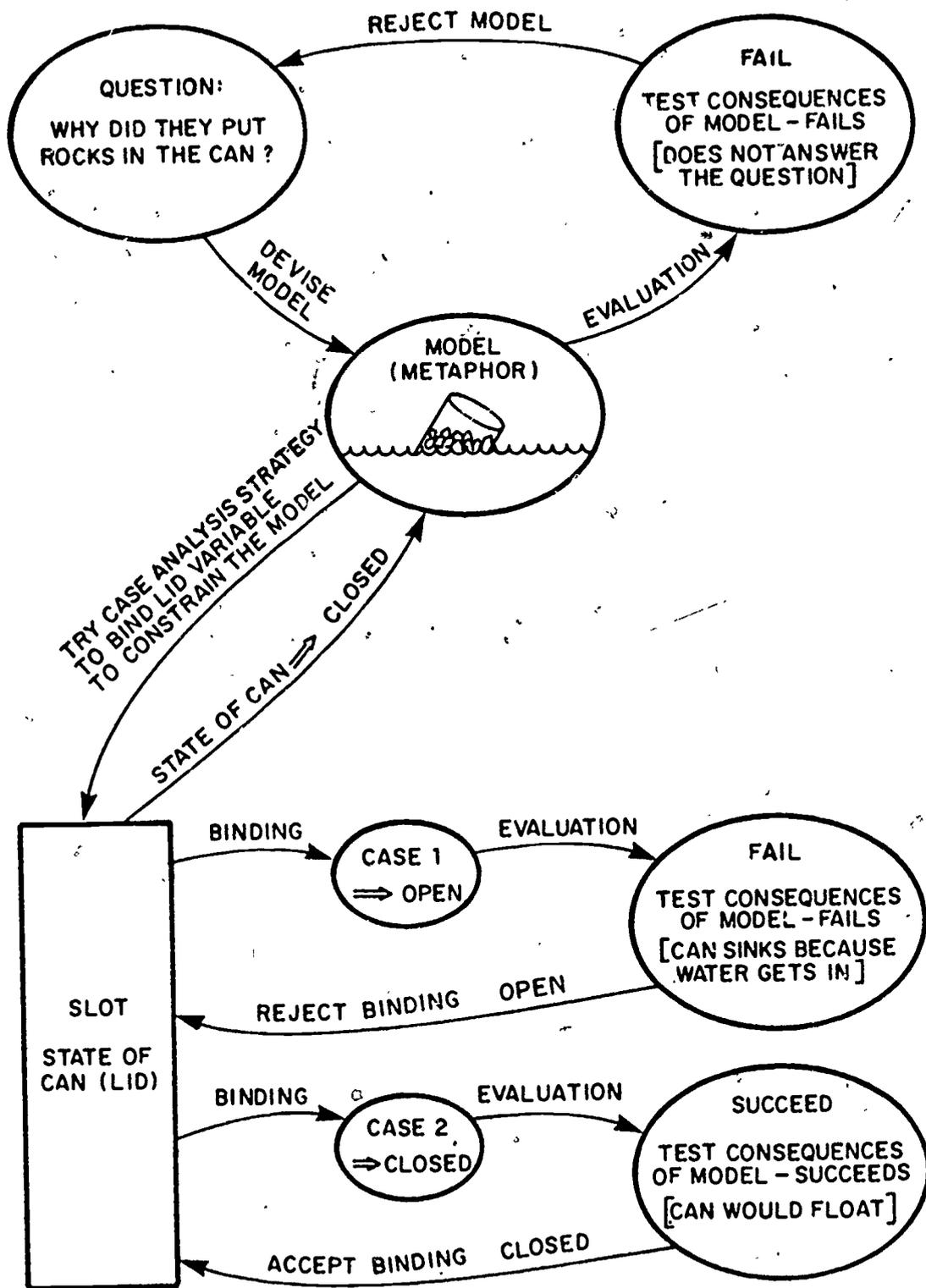
Figure 5. Case analysis for the lid variable
(protocol segment 3)

3¡

1. <u>The plausibility of the assumptions and consequences of the</u>
<u>model</u>. In constructing any model, it is necessary to fill a number
of slots in the model with default values. Furthermore, the model
has certain consequences that follow from it. There are a number of
places in the protocols where subjects clearly are testing the
plausibility of the model's default assumptions and consequences.
For example, in the second segment of the protocol, the subject
tried to test the likelihood that Mystic Pond might be salty. To do
this she tried to think of cases of salt water lakes, and she came
up with the Great Salt Lake in Utah. Apparently in part, because of
the relative <u>unavailability</u> (Tversky & Kahneman, 1973) of salt water
lakes among the lakes she knew, she decided it was fairly
implausible that the Mystic Pond was salty. She may also have found
it implausible that salt water would hold up a can filled with
rocks. In the last segment she spent considerable effort
elaborating the anchor model to see if she could think of some force
(e.g. currents or winds) the rocks would anchor the can against.
All of these are tests of parts of the model against the subject's
world knowledge. They make use of the wide variety of strategies
people have for evaluating plausibility (Collins, Warnock, Aiello, &
Miller, 1975).

2. <u>The completeness of the model</u>. Models are evaluated in
terms of how well the assumptions and consequences of the model
answer all the different questions that arise. For example, tne
salt-water-lake notion answers the question "Why didn't the can
sink?", but it doesn't answer the questions, "What was the function
of the rocks?" and "What were the intentions of the people who put

the can in the lake?" Thus the salt-water model seems shaky because it doesn't answer important questions that arise with respect to the text.

3. <u>The interconnectedness of the model</u>. The assumptions or consequences of a model are weighed with respect to how they fit together with other aspects of the model. When particular assumptions are unsupported by other parts of the model, the whole model seems shakier. For example, when the subject was considering currents and winds as forces acting on the can, she rejected currents because they didn't fit with the fact that it was a pond. But she accepted winds because the people were sailing which requires winds. In her final model then, winds enter in two ways: to sail the boat and to provide a force to anchor the can against. Subjects appear to put more belief in the plausibility of the model if the different pieces tie together in more than one way.

4. <u>The match of the model to the text</u>. Very often subjects seem to weigh the model in terms of how well its assumptions or consequences match particular aspects of the text. For example, in the second segment the subject decided that "sailing" on the lake could be "ice sailing", but that if the can was held up by ice, it wouldn't really be "floating." Thus, we see a careful matching (Collins & Loftus, 1975; Smith, Shoben, & Rips, 1974) of the concepts implied by the model against surface aspects of the text.

In making judgments about the plausibility of a model, subjects weigh all these different factors against each other. Sometimes, each particular aspect of the model may be acceptable in and of

itself, but taken together the whole thing seems shaky. This may have been why the one subject rejected the salt-water model or another subject rejected the lighter-than-water-rocks (e.g. pumice) model. However, these four tests are not exhaustive; they merely encompass the major factors the subjects expressed concern about in the protocols.

In the subjects' evaluation of models there appear to be a parallel to the distinction in science between a model's ability to explain prior data and its ability to predict new data. For the most part in the protocols the subjects are evaluating prior data. But in the seventh segment there is a striking case where the subject's model led to a prediction that was confirmed by referring to the text (test 4 above). Her model implied that the function of the rocks was to keep the can stationary. Then looking at the text again, she found in Bill's remark a "there" which could be interpreted as meaning "in that one place." This confirmation of a prediction from the model seemed to give her much more confidence in her model. There is no way to tell for sure, but this suggests that making a successful prediction may act to increase confidence more than finding a successful account of prior data.

IMPLICATIONS FOR READING COMPREHENSION

In our schools we do not typically teach children what to do when they cannot comprehend a text. Furthermore, the strategies children have developed to deal with comprehension difficulties in conversation (e.g. ask a question or look puzzled) do not apply in reading (Rubin, 1978). At this point children need to develop a

whole new set of strategies for what to do when they don't understand. It is just such strategies that we see so ubiquitously in the protocols of the adults we studied.

One failure that occurred in the adult protocols is perhaps revealing of what may go wrong when a child cannot understand a text. One of the subjects, in dealing with the boating text, apparently failed to make much sense of it because she tried to answer the wrong questions about the text. First she dealt with the question "Who were John and Bill?" Because she quickly figured out who John and Bill were, she thought the problem for the reader in understanding the text was going to be to figure out their identities, just as in a mystery story. Bill's remark at the end then violated her expectations about the point of the story. This in turn led her to ask the question "Why didn't Bill explain what the rocks were doing in the can?" This too is a reasonable question about Bill's intentions, but it does not help find answers to the major questions posed by the text, i.e. "Why didn't the can sink" and "What was the function of the rocks." She did not ignore these questions altogether, but she did not focus on them enough to find a solution. Nor was she exceptional. Another subject, who focussed on the question "What was the intention of the people who put the rocks in the can," which seems from Bill's remark to be the correct question, also failed because the question leads down blind alleys. It brings up issues such as, "Who were the people who put rocks in the can?", "What were they trying to accomplish?" (e.g. catching lobsters or raindrops), "Were they playing some game, doing some job, or trying to confuse John and Bill?" These examples suggest

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that one of the most critical skills may be to choose the right questions to focus one's problem solving skills upon. But the protocols do not tell us how people make these choices.

The theory outlined here provides a framework for studying specific questions about text understanding. For example: How do skilled readers formulate questions about a text? What strategies do they use to revise the models they construct to answer these questions? How do they evaluate those models? These questions address the strategies essential for dealing with difficult texts. By pinpointing the strategies that skilled readers use for dealing with difficulties in understanding, it should become clear what strategies unskilled readers must learn.

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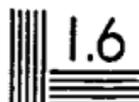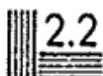
MICROCOPY RESOLUTION TEST CHART

NATIONAL BUREAU OF STANDARDS

ABSTRACT
                This survey evaluated the reading programs and
reading instructors of 13 New Jersey community colleges and reviewed
the research literature. Results of the survey indicate that the
reading instructors, for the most part, are highly qualified. The
survey found a disparity, however, between the remedial needs of
typical community college students, as reported in research
literature, and the reported reading program objectives of the
surveyed schools. Although researchers and practitioners emphasize
individualizing course objectives to correspond with students' needs,
the surveyed schools generally focus on preselected skills and
materials (usually comprehension skills and workbook materials) that
force the students through a prescribed skills sequence. The
evaluation procedures for a majority of the reading programs were
judged as adequate, but the survey report concludes that a real need
exists for reading instructors to be thoroughly trained in the
procedures and importance of both diagnostic and evaluation
procedures. Appendixes contain the names of the community colleges
surveyed, the workbooks they reported using, and sample copies of the
survey and cover letter. A list of references is included. (RL)

A SURVEY OF COMMUNITY COLLEGE READING

PROGRAMS AND PERSONNEL

IN NEW JERSEY

A MASTERS EQUIVALENCY THESIS

SUBMITTED TO THE FACULTY

OF THE GRADUATE SCHOOL OF EDUCATION

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Dedication

"Nothing that is so, is so" says Feste
"A natural perspective that is, and is
not," cries Orsino.

Shakespeare

to the unfolding worlds of
Hana and Alicia

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CHAPTER I

INTRODUCTION AND PROBLEM

Background

In the 1960's with the inception of open-admissions policies and more flexibility in admission requirements, developmental reading programs were established as an essential ingredient in the curriculum of most community colleges and universities (Anderson, 1975, Guilford, 1976). Leedy (1958) indicated that reading was not a very integral part of university study before the middle of the nineteenth century. Students were not encouraged to read independently, nor was there much in the way of required reading for most courses. The students were expected to attend lectures and to learn directly from professors.

Leedy (1958) documented the expansion of curricula in the sciences and humanities which called for more independent work and adequate reading skills to meet this demand. Slowly, reading programs began to be seen as an academic need, even in the best of our universities, in order to avoid many of the difficulties encountered in various academic fields.

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In 1933, Buswell at the University of Chicago founded one of the first college level reading programs in the United States. Buswell (1937) then conducted one of the most intensive studies in adult reading resulting in the landmark report "How Adults Read." Harvard began a program in 1938, after which other colleges and universities followed suit (Geerlofs, 1967). In the last twenty years there has been a tremendous increase in the number both of developmental reading programs of the university and of adult literacy training programs.

Paralleling the growth and interest of developmental and remedial reading at the senior college has been almost unbridled growth of junior colleges in the 1960's and 1970's. The increasing numbers of community colleges have made higher education available to students of varying academic promise. The open door admission policy encourages students to begin degree programs without regard to previous experience, probable academic success, or level of academic skills (Henderson, 1976). Students have been found lacking in basic study skills and reading achievement (Cooke & Farrow, 1975, Maxwell, 1971b, Cartwright, 1971, and others). The establishment of various programs to improve study and reading skills has been extensive and is essential (Guilford, 1976, Anderson, 1975).

The rapid proliferation of programs has created
a large demand for qualified personnel for the teaching
of developmental reading courses and study skills at the
community college and university. The instructors of
reading improvement courses are given the responsibility
of providing high-risk students with skills needed to
accomplish both career and educational goals (Henderson,
1970). Because of the rapid development of these courses,
they are frequently taught by personnel whose speciality
is in a discipline other than reading and who know very
little about the teaching of reading.

There have been various surveys of college and
adult reading programs (Leedy, 1958, Geerlofs, 1967,
and others). However, there has been a dearth of surveys
assessing community college reading programs and personnel
and none have focused on New Jersey.

Problem

Answers to the following questions were sought in
the literature review and from the data base accumulated
through the survey:

1. What are the objectives for reading programs
   for New Jersey community colleges?

2. What are the most common materials and
   methods and technological equipment used to
   meet specified objectives?

3. What is the relationship between literature research findings and specified objectives and materials of the survey?

4. What are the qualifications of the instructors? Do they meet the standards recommended in the literature?

5. What evaluation procedures are used to improve the course presentation and contents?

Importance of Study

A number of surveys of college reading programs have been conducted regarding number of programs, departments conducting the programs, materials used (Geerlofs, 1967). However, there have been no extensive surveys devoted primarily to community colleges encountered in the literature.

This survey on community colleges incorporates the same questions regarding objectives, materials, tests, length of course, and other pertinent data that were reported in the benchmark study on senior colleges by Geerlofs and Kling (1968). In addition, further information was sought regarding the department which conducts the course, the training of instructors, drop-out rates, and the type of course evaluation that is being used.

Definitions

1. Community college: a two year college.
   Community college is used interchangeably
   with the term, Junior College. It also
   refers to a school having a terminal two
   year program.

2. Reading improvement course: a reading
   course to improve reading performance
   regardless of reading level.

3. Developmental reading course: a reading
   course designed to continue the develop-
   mental nature of the reading process, that
   is, one can continue to develop better
   reading skills throughout one's life.

4. Remedial reading course: a reading course
   in which remediation of specific
   deficiencies is the primary objective.

Limitations

The survey was limited to New Jersey Community
Colleges. There were limitations as to the type of
questions asked and the survey format used.

CHAPTER II

REVIEW OF THE LITERATURE

Ten basic areas were reviewed: the psychology of reading, the goals and objectives of college reading programs, screening and diagnostic pro_ es used in the college reading programs, the classroom organization patterns of college reading programs, the criteria used to evaluate the reading program, a profile of the college reading teacher, the materials and techniques used in the reading programs, a review of various surveys of college-adult reading programs, and a review of the literature specific to community colleges reading programs.

The review is devoted mainly to college and adult reading programs because of the dearth of literature about community college reading programs. It was believed that the information on college and adult reading programs would have some applicability since many programs in the senior programs are offered in the first two years.

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Psychology of Reading

Reading instruction in the twentieth century was dramatically influenced by research on the psychology of reading and more recently by research in other related academic disciplines such as linguistics (Smith, 1959). Spache (1956b) noted that the scientific investigation of reading and the reading process did not develop much before the middle of the nineteenth century.

The emphasis of this early period was upon a rather mechanistic interpretation of reading (Spache, 1956b). Reading was considered to be basically a perceptual act, that of quick recognition of words. This could be traced primarily to the research emphasis of the period which made attempts at understanding the physiology of reading. Investigations examined right and left dominance of hands and eyes, movements of the eye when reading, mirror-reading or mirror-writing tendencies, and similar physical elements possibly related to the reading act (Spache, 1956b). Subjects used in the investigations were almost exclusively adults and skilled readers (Huey, 1912).

One of the classic studies of the period by Cattell (1885) involved an investigation of processing tendencies of the eye through tachistoscopic exposures. He found that with a fast tachistoscopic exposure, a skilled reader can perceive four unconnected letters,

a very long word, and four or more words if they form a sentence. Dodge (1905) showed that perception occurs in reading only during fixations, and not at all during the saccadic jumps from one fixation to the next.

Buswell (1937) in a landmark study on adult reading conducted at the University of Chicago concluded that it was necessary to separate the thinking aspects of reading from the perceptual mechanisms that operate in reading. He concluded that "psychologically, reading is not a complicated situation. Basically, it is simply a form of perceptual experience followed by interpretations of varying degrees of importance" (p. 144). His studies on eye movements in adult readers concluded a vast and time-tested era of research on the psychological aspects of the reading process.

During this era of research, the reading act was thought of in terms of perception and in a relatively mechanistic way. Diagnosis of difficulties in reading took the form of examination of the physical and particularly the eye-movement characteristics of the learner (Spache, 1956b).

Remedial work consisted largely of rote memorization supplemented at first by various crude laboratory quick exposure devices, such as flashcards. With the increased technological developments of the eye-movement camera and refinements of the tachistoscope, diagnosis

of eye-movement patterns became more refined and
remedial work was intended to increase both the speed
and span of word recognition (Spache, 1956b). Experi-
ments were conducted in which subjects were trained to
fixate on columns of numbers, words or phrases, or on
asterisks or vertical lines running through the page
in the hope of retraining the fixation habits of the
subjects. This was expected to transfer to their
capacity for reading. Spache (1956b) concluded that
"success in reading was considered largely a reflection
of physical and inherited traits which could be modified
best by physical or medical measures" (p. 14)..

The teaching of beginning reading reflected this
bias that reading was basically a perceptual or word
recognition task. "The use of an alphabetic method
was succeeded by a rote word method. . . . The almost
exclusive use of oral reading, or what was really word-
calling," (Spache, 1956b, p. 15) further showed their
dependence upon this early concept of reading.

Adult developmental reading was a concept which
had its beginnings in the work of Buswell (1937) at the
University of Chicago. He initiated one of the first
college level reading programs in 1933. As in the ele-
mentary levels, the primary emphasis of the early college
programs was on perceptual training which it was hoped
would have a transfer value to the reading process and

on the speed of reading which was thought to be affected by perceptual training. Dodge's conclusion (1905) that perception occurs in reading only during fixations lent itself very well to the research and teaching bias of the period.

Despite the mechanistic emphasis of the time period, some very important ideas were emerging which led to a modification of the definition of reading and a change in the objectives and practices of teaching the reading skills. Reading had been considered a simple perceptual process and skill which could be taught. However, Spache (1956b) identified four basic psychological facts which he derived from an examination of the studies of the period which led to a broader definition of the reading act:

1. Huey (1912) concluded that reading was performed in a series of short, quick movements and fixations across a page, not one continuous sweep across the page;

2. The length of the fixation pause was a reflection of various factors--familiarity with the subject material and the individual's reading ability (Cattell, 1885, Huey, 1912);

3. There is a degree of flexibilit in the perceptual habits of the reader due to

various factors, but the ocular-motor habits

of a reader tend to persist in many reading

situations (Cattell, 1937, Huey, 1912); and

4. There are other eye movements besides the

usual forward and regressive movements in

the reading of materials (Spache, 1940).

The shift in thinking was gradual. The concept

of reading was becoming more comprehension-oriented.

Thorndike (1917) emphasized the idea that a facet of

mature reading was reasoning. The area of testing grew

in importance. Reading achievement tests emphasized

comprehension of silent reading as much if not more than

rate of reading or skill in word recognition (Spache,

1956b).

There was a questioning of the value of oral

reading as opposed to silent reading in the teaching of

reading. Research seemed to indicate that an early

emphasis upon silent reading was desirable. Spache

(1956b) listed nine major points established by research

findings in this era as follows:

1. Children are able to read more rapidly

silently than orally by the fourth grade

(Judd et al., 1918);

2. There is a tendency to subvocalize;

3. Subvocalization tends to decrease with

greater proficiency in reading;

4. The span of recognition is from one to two and one-half words (Buswell, 1937);

5. The span of perception in tachistoscopic exposure i r adults is from four to five words of unrelated text with an increase of about one word in meaningful context (Buswell, 1937);

6. The exact process by which words are perceived is not entirely clear. There are three possible explanations--the context provides a meaningful cue; the word is the unit; and significant letters act as cues (Huey, 1912, Buswell, 1937):

7. Comprehension is a reasoning process, a synthesizing (Thorndike, 1917);

8. Comprehension is largely determined by the reader's background (Hilliard, 1924); and

9. Vocabulary growth is related to other cognitive functions (Gray & Holmes, 1938).

Spache (1956b) noted that during the 1930-1950 period, the definition of the act of reading was extending even further. Critical flexible reading was encouraged to promote evaluations of an author's presentation. Reading was seen as a means lending itself to an end of new insights and improved patterns of thinking and behavior. Researchers began to identify

the need for flexibility in reading, to be able to adjust
to various texts and to one's own purposes in reading
(McDonald, 1957).

Reading tests were analyzed. Some researchers
began to break down reading into various component parts
in order to better investigate and understand the read-
ing process. The growing dependence on the standardized
reading tests for diagnosis and measurement of academic
achievement led to an emphasis on the reading skills
measured by reading tests in both research and
instruction.

Some insights listed by Spache (1956b) derived
from the research of this period were as follows:

1. Very little is understood about the mental
   processes involved in reading for different
   purposes or how to promote the growth of the
   skills necessary for flexible reading
   (McDonald, 1963a, 1958a, 1957);

2. There may be a marked relationship between
   the reader's ability to associate words and
   ideas and his rate of learning (Bear &
   Odbert, 1940, Traxler, 1934); and

3. The factors most frequently identified in
   relation to reading were vocabulary, intelli-
   gence, the ability to see verbal relation-
   ships, and perceptual, verbal fluency

(Wrightstone, 1940).

Spache (1956b) stressed that as reading instruction emphasized training in how to think, success in reading was gradually seen to be markedly affected by the attitudes, feelings, prejudices, and general adjustment of the reader. This concept of viewing reading as one aspect of the total growth of an individual characterizes the current psychological explanation of reading (Olson, 1940).

In the 1950's, 1960's, and 1970's, there was a tremendous proliferation in research into the reading process in all aspects of reading. A relatively new development in the field was the increased interest in model building and reading theory.

Other academic disciplines were contributing to the understanding of the reading process. Disciplines such as linguistics provided additional frameworks for present research and have added a greater depth and dimension to many of the proposed reading models and theories.

Williams (1965) questioned the applicability of some of the research presently being conducted, whether or not it was going to contribute to the pedagogy of the teaching of reading, and whether there is not so much research being conducted that we are presently getting diminishing returns for the amount of the research that

is being done.

Goals and Course Objectives

Buswell, who engineered the reading program at
the University of Chicago in the 1930's and who conducted
a landmark study in the understanding of eye movements
in adults (1937), clearly identified reading as a per-
ceptual act and spearheaded the development and focus of
adult reading on to perceptual training. Buswell (1957)
explained that:

> the unique characteristic of reading lies in
> its perception rather than comprehension.
> Comprehension is an overall factor that applies
> to listening and thinking as well as reading.
> The new element encountered in the learning
> of reading is the perceptual recognition of
> the printed verbal system. (p. 103)

From the studies of eye movements by Buswell and Judd
and others in the 1920's and 1930's, there was evidence
that poor readers go about various reading tasks in the
same inflexible way, whereas good readers adapt their
rate and method, that is, their eye movements, of
reading to the purpose at hand.

From these beginnings, college level reading
programs focused their attention primarily on developing
the speed of reading of students through the training of
eye movements and perceptual behavior. Publications con-
cerning college reading programs were very difficult to
find in the literature until the Southwest Reading
Conference, concerned with college and adult level

reading programs, was initiated in 1952.

Eller (1956) noted that there had been major changes in the goals of college and adult reading programs since 1952. The changes were in the direction of a broader concept of reading as more than a purely perceptual process. He felt that the concern was with the more intellectual comprehension skills essential to high level understanding encountered in college courses. He listed the following critical areas which many college level reading courses had as goals:

1. critical reading ability;

2. facility with the study skills; and

3. abilities in organization and generalization.

Eller (1956) noted that there had been a change in the emphasis of vocabulary development to the teaching of specific vocabulary which was of more immediate value and more relevant to the needs of the students. Also, the semantic variation of words was usually an aspect of vocabulary development. Eller (1956) stated that another goal of study skills courses just emerging was some sort of training in listening since college students have to learn a great deal by listening to lectures.

Instruction was starting to focus more on the individual student and the concept of teaching reading in various content areas was taking form. The original

concern with the relationship between eyesight and read-
ing was giving way to the more inclusive problem of the
correlation between visual perception and reading.

Worth (1956) listed the preliminary considerations
for setting up a reading program in the junior college.
She emphasized that the differences in planning for a
junior college as opposed to a university were that the
concept of a junior college was based on service to the
community and established to provide post-high school
education for the youth and also for the adult population
of the community. Because this involved a student body
with a wider cross section of interests and levels of
ability, Worth explained the need for diversification in
the types of reading improvement courses offered in the
community college.

Worth (1956) wrote that certain questions must
be answered before arriving at decisions concerning the
type of reading program that would be offered at the
junior college. These questions were as follows:

1. Is there a need for a reading program
   according to student opinion and faculty
   recommendation and test results?

2. Will the program be required or voluntary?

3. Will it be remedial or developmental or
   a combination?

4. Will credit be offered?

5. Will there be fees?

6. What diagnostic procedures will be used?

7. How will the course itself be evaluated?

8. What criteria will be used to evaluate the course?

Kingston (1959) added a number of other considerations for someone interested in establishing a reading program. They included the length of time a student was to be enrolled in the program, the selection of the students, the instructional procedure to be used, and the cost of such a service.

Worth (1956) in her study presented in condensed form goals listed by the twenty-one junior colleges that she surveyed. There were nine goals, several of which were closely interrelated:

1. Understanding the needs of the students through diagnostic procedures and individual conferences.
2. Establishment of remedial procedures more closely allied to diagnostic findings.
3. Making use of planned bibliotherapy when the need is indicated.
4. Teaching the mechanics of reading and good reading habits.
5. Teaching basic reading skills. . . .
6. Teaching good study habits and study skills.
7. Teaching listening techniques.
8. Improving the self-confidence of the reader. . . . the keeping of progressive records of his reading activities by the student. . . .
9. Cultivation of the ability and desire to read widely. . . . (p. 106)

McDonald (1957) re-emphasized the concept of
reading that moved toward continually broader inter-
pretations and pointed out that remedial programs at
the college level must similarly broaden their objectives.
The complexity of the reading process means that a
successful reading improvement program would have many
outcomes, equally complex in their nature and consequence.
Nonetheless, this trend towards emphasizing individuali-
zation of the reading programs in the literature does
not necessarily limit the goals of the program even
though it might make it more difficult to adequately
evaluate the effects of the programs.

Sommerfeld (1957) noted that the trends in
college reading programs questioned the speed orientation
still a part of many reading programs. He pointed out
that speed may be over-emphasized since it is how well
one reads that really counts, not how fast nor how much.
Miller (1957), also recognized the danger of over-
emphasis on reading rate, but on the other hand, she
warned against the problem of the individual who seems
unable to make any material progress in increasing his
reading rate because of his concern with the loss of
comprehension. She raised the question of how to decrease
the fear of comprehension loss and yet to maintain the
importance of idea content in reading. Pauk (1958) also
felt that rate should be an ingredient of a reading

program but that it should be placed in proper perspective. He saw rate as a tool to provide greater flexibility of speed by extending the range of reading speeds that a student could utilize. He acknowledged that there were different speeds for skimming, for skipping, for reading varied content for varied purposes. Mazurkiewicz (1958) explained that the emphasis of college reading programs should be on corrective reading, on the development of vocabulary, and on the critical study-type skills, not on speed.

Pauk (1958) concurred with Miller (1957) that there were degrees of comprehension: that a reader did not necessarily have to comprehend all materials at the same level. "The depth of comprehension depends whether we read for recreation; for background or for complete understanding" (Pauk, 1958, p. 46). Along these lines, Paul argued that we must teach basic reading skills in terms of the students' subjects. He felt that many reading problems revolved around the student's inability to apply the basic skills, rather than their ignorance of the skills. He listed nine basic skills which appeared in the Forty-seventh Yearbook of the National Society for the Study of Education (The Yearbook Committee, 1948): 1) vocabulary; 2) inference of words and meanings; 3) getting meaning from a sentence; 4) grouping words and phrases meaningfully; 5) following written

directions; 6) flexibility in speed of reading; 7) retaining meaning of what has been read; 8) organizing material; and 9) skimming.

There is a need to teach these skills as a means for achieving higher levels of meaning rather than as ends in themselves (Pauk, 1958). Davis (1959) also recognized the need to teach for transfer and thus to make the situations in training as similar as possible to real situations.

Brigham (1959) emphasized that instruction should utilize and guide toward independent student work for the following sequence in reading: 1) establishing specific purposes; 2) utilizing experience and information; 3) understanding organizational pattern of materials; 4) gaining flexibility in reading rate; 5) student evaluations; 6) checking as necessary; and 7) review. Nonetheless, it was important to offer opportunities to develop skills in reasoning, vocabulary and syllogistic reasoning; organization of materials, flexibility of reading rates, use of reference materials; and study skills such as previewing, outlining, summarizing,

Maxwell (1963a) pursued the line of argument that speed of reading is affected by many factors including the purpose for which the person is reading. Because a study analyzing grade improvement by subjects

revealed that students who took a college reading course earned higher grades in social science and literature, than a control group; but that the reading course failed to affect their grades in science and mathematics. Maxwell suggested that college reading programs may have little relation to the skills involved in science and mathematics courses.

She also questioned whether the reading needs of college freshman result from deficiencies that go back to high school or are new needs arising because of the differences of college demands. She called for research to elucidate whether there were different skills needed by college sophomores, juniors, seniors, and graduate students and a reappraisal of the goals and objectives of college reading programs.

Rankin (1963) found that there was a general consensus that it was unwise to try to improve reading rate among students deficient in comprehension skills. However, Rankin found that poor readers might benefit from speed reading at college level even before their comprehension was brought up to a desired level.

McDonald (1963a) suggested that much of the disagreement is the consequence of dealing with rate of reading and comprehension of reading as independent or co-equal entities. He maintained that they are neither, but that both are interdependent constructs. Maxwell

(1963a) supported McDonald's position that reading rate and comprehension level were interactions involving the purposes of the reader, the reading ability of the reader, and the difficulty of the material. McDonald (1963a) pointed out that reading flexibility was an essential skill for high-level reading.

McDonald (1971) later developed the concept of reading versatility over a twelve year period. Reading flexibility was defined in terms of reading rate flexibility. Rate flexibility assumed that a reader could automatically change his rate of reading without changing his purpose for reading and that directing a student to read better would promote a corresponding increase in comprehension. Research has not supported these contentions and has led to a need to redefine reading flexibility.

> McDonald (1971) used the term reading versatility:
>
> to describe the ability on the part of the reader to utilize those patterns of processing reading inputs which are appropriate for the style, difficulty level, content and theme of the reading material at hand, while also being consonant with achieving the reader's purpose to the optimum level of his physiological and psychological performance. (p. 169)

Thus as the concept of reading becoming broader, the concept of reading comprehension was being re-evaluated to include the other variables that affected reading comprehension.

Pepper (1971) outlined the evolution of the objectives of the reading courses at Wayne State University from 1941. Initially, the classes were voluntary, non-credit, and non-remedial for the average or better reader with no provision for individual diagnosis or instruction. The training focused on the development of more efficient visual skills. Exercises were designed to develop smooth or rhythmic eye movement patterns. Course evaluations indicated that the mechanical techniques utilized did increase rate of reading without a loss of comprehension for a large number of students.

In order to meet the varied needs of a heterogeneous university population separate classes in study skills were added in 1943 and vocabulary development in 1948. Individual attention and counseling gradually involved more of the staff's time (Pepper, 1971). In 1953, the courses were combined into a reading efficiency, study skills, and vocabulary course with the establishment of a reading laboratory to handle students with special problems. The goal of the basic course, in 1971, according to Pepper, focused on developing the necessary skills and attitudes for dealing with the range of college studies. The areas stressed are flexibility in rate, study-type reading, vocabulary-development, and efficient study techniques.

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Crist (1975) found that vocabulary development was one of the most pressing needs of academically disadvantaged college freshmen in a developmental reading course. She argued that unlike many skills these students lack, vocabulary building is one they are eager to perfect. Because of this ready-made motivation, she recommended the use of vocabulary clinics to improve vocabulary. Guilford (1976) divided the course content of the Texas Southern reading program into the basic areas of study skills, comprehension, and vocabulary development.

Spache (1959b) pointed out three types of reading programs: 1) a machine or skills-oriented program with the primary emphasis on improving the reading act; 2) a program with a broader conception of reading that stresses insights, skills, and counseling in equal proportions; and 3) clinical programs which focus almost exclusively on psychotherapeutic approaches. He recommended employing all the approaches in varying degrees according to the goals of the course.

To conclude this section on the goals and objectives of community college programs, we will refer to some of the reasons why it is necessary to teach reading at the college level. Harris (1957) gave the following reasons:

1. Reading is a process never completely mastered; there is always room for improvement;

2. Due to increased reading demands, reading efficiency and flexibility must be taught at all levels;

3. In order to maintain a high level of proficiency and efficiency in reading, there must be continuous and specific practice; and

4. Tests of college students reveal that their reading skills are far below their potential and the level necessary to function academically at college.

Screening and Diagnostic Practices

Spache (1956a) identified five practices that were used in identifying poor readers in college. He clarified the concept that the methods used for selecting those pupils who needed help should be closely related to the kind of help available for corrective and remedial training. He explained that if regular classroom teachers were to assume responsibility for such training, then gross methods of selection and diagnosis would be sufficient. The five diagnostic techniques that Spache enumerated are as follows:

1. Mental Age Standards: Spache felt that
   direct comparisons between mental age and
   reading test scores were not feasible, nor
   is it known how great the difference must
   be to be considered critical;

2. Monroe Index: The average of the chronological
   age and mental age and arithmetic-computation
   age were compared with the pupil's reading
   age. Like the Mental Age Standard there
   were possibilities for making gross errors;

3. Case-study: This involved a study of the
   probable causes of reading difficulty of a
   student. Spache felt that this was an
   excellent method but so demanding that it
   probably could only be used in clinics after
   preliminary diagnostic procedures had already
   been used;

4. Standardized tests: Probably the most
   common method of identifying poor readers
   in college. This type of test should be
   used only as a crude approximation of indi-
   cating pupils who appear to be retarded in
   the particular skills measured by the test.
   Spache cautioned against using the results
   of these tests to indicate a student's
   abilities in any of a half dozen fields of

study;

5. <u>Informal inventory</u>: This consisted of a
series of graded reading selections drawn
from a specific content field such as
physics, history, or psychology. The scope
of the inventory could be broadened to
include measures of technical vocabulary,
auditory comprehension, and others. The
strong points of this type of inventory were
that it deals with materials of a specific
field by identifying the various levels of
material in the content field that pupils
can handle.

Spache (1956a) explained that "all these efforts
together, however, do not constitute a complete diagnosis
of all the factors affecting reading success. The causes
of some pupils' difficulties will still be unknown" (p.
132).

Many of the special programs for students who
manifest basic academic skill deficiencies operate under
the premise that individualized instruction be provided
in order to meet the diverse needs of the students. An
accurate individualized assessment of the student's
entry skills is essential so that appropriate activities
and materials can be assigned. Drummond, Kent, and
Pinette (1975) pointed out the need to assess a student's

personality before placing him in an individualized
reading program. They referred to the literature which
reported a different array of needs for poor readers as
compared to good readers based upon their responses to
personality tests.

Drummond et al. (1975) investigated the internal-
external control construct[1] as related to student
achievement in an individualized community college read-
ing course. Thirty freshmen were identified as either
externally or internally oriented based upon their
scores on the Internal-External Scale. Each student
was assigned an individualized reading program after
proper diagnostic procedures evaluated his reading
skills. Post-test results indicated that the external-
oriented students had achieved more than the internal-
oriented students.

A sensitivity to individual differences is an
important, if not essential, aptitude for reading teachers
to possess; however, student differences are only
important from an instructional point of view, that is,
if the students need to be taught in different ways.
"Nevertheless, significant learning often does depend

---

[1]When a student believes that reinforcement is
contingent upon his own behavior, he believes in internal
control; when he believes that reinforcement is con-
tingent on chance or other people, he believes in
external control.

upon a modification of educational strategy" (Drummond
et al., 1975, p. 37). Thus, if diagnostic procedures
of personality components contribute significantly to a
student's performance in an individualized reading pro-
gram, then instructional methods and materials should
be determined on the basis of this type of information as
well as on the basis of scholastic information.

Maxwell (1971b) explained that the dynamics of
personality, motivation, and interpersonal relationships
all contribute to and influence a student's reading
performance in college. She recommended intensive
counseling in order to change student's habits or enhance
their chances of succeeding academically. She documented
that personality types correlated highly with various
types of reading behaviors. The only effective
diagnostic procedure for personality assessment, accord-
ing to Maxwell, was for reading specialists to possess
counseling skills in order to be more effective in
changing reading and study skill behavior.

Hafner (1964) explained another diagnostic
technique for college reading programs. He indicated
that the cloze procedure as an index of a student's
ability to read with comprehension. Rankin (1959) con-
cluded that the cloze procedure was a reliable technique
for measuring readability of a textbook or passage,
intelligence, pre-reading knowledge, and various components

of reading comprehension. There were very high corre-
lations with cloze scores and other measures of reading
comprehension in both pre- and post-test comprehension
scores. Hafner (1964) found that the cloze scores com-
pared favorably with standard predictors as a predictor
of course grades and that cloze scores correlated
positively and significantly with measures of intelli-
gence, vocabulary, information, and course marks.

Diagnostic procedures in college reading programs
are varied. The most common diagnostic tool is a
standardized reading test. Consensus is that there is
no one standardized test that has been developed which
is both reliable and valid enough to measure all the
variables of college and adult readers. There are a
number of factors which affect reading test scores and
the validity of test results. They have been identified
as personality characteristics (McDonald, 1960b, Rankin,
1963, Drummond et al., 1975, Mzxwell, 1971b); purpose of
the test and reader (Davis, 1961, Maxwell, 1965); testing
conditions (Davis, 1960): attitudes of the test taker
(Harris, 1964); and passage dependency and independency
of the test (Preston, 1964, Pyrczak, 1972, and Tuinman,
1973). Another glaring weakness of standardized tests
for college reading improvement programs is their failure
to measure many of the primary skill goals of such pro-
grams (Anderson, 1975). Skills such as purpose, reading

flexibility, retention are often not measured by tests (Maxwell, 1971b).

Nonetheless, standardized tests are the most reliable, economical, and feasible measures of group reading achievement that are available. Tests must be used cautiously with respect to their limited validity and supplemented by information from them with other clinical diagnostic procedures that provide data on other variables such as personality, individual skill deficiencies, and motivation.

A review of the standardized tests for college and adult readers in the Mental Measurement Yearbooks revealed that, despite their limitations, some tests are more reliable, more valid, and more applicable to the college situation than others. Geerlofs (1967) found from a review of the Mental Measurement Yearbook in 1940, 1953, 1959, and 1965, that the Cooperative English Test C2: Reading Comprehension, the Nelson-Denny Reading Test, and the Davis Reading Test appeared to be the most psychometrically sound of those available for college and adult readers.

Tillman (1973) presented an annotated review of four year college reading improvement programs from 1941-1971 and found the Iowa Silent Reading Test, the Nelson-Denny Reading Test, and the Cooperative Reading Test to be among the three most frequently used.

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Kingston (1965) pointed to recent trends in the
development of a more adequate, broader, more complete
psychology of reading. However, he emphasized that these
advances and developments in research capabilities had
little impact on the measurement or instruction of read-
ing. He noted that there is little difference between
the tests widely used today and those of twenty-five
years ago with the possible exception of measures of
flexibility of reading. He conducted a rather crude
study comparing students' written responses to selections
from the Survey Section of the Diagnostic Reading Test
with the content of multiple choice items developed by
the test constructor. He found that the students omitted
facts deemed significant by the person writing the
standardized test items and tended to write general
statements about what they had read. He concluded by
asking, "Does the reading test test reading as the class-
room teacher or reading specialist sees reading?" (p.
109).

McDonald (1966) asserted that it was high time
to abandon the constructs "of rate, vocabulary, and com-
prehension as exemplified by most standardized reading
tests" (p. 218). He indicated that, instead, there was
a need to have reading tests that point out "how well
the student can achieve his purpose for reading" (p.
218). The important information that testing should

provide has to do with the following:

1. The conditions and kinds of reading materials with which a student is able to achieve his purposes;

2. The flexibility of the reading style of the student; and

3. The deficiencies which make it difficult for a student to read effectively.

This assumes that the selection of the testing materials are suitable and specific to the amounts and type of appraisal wanted. It may not be sufficient to measure reading performance on a single test (Kingston, 1965, McDonald, 1958a). Measurement should be made:

> under conditions which clearly define the purpose for which the reading is being done, with quite different instruments being available for assuring that the several important but very different purposes for which reading is done are in fact achieved. (McDonald, 1971, p. 170)

McDonald (1971), as Kingston (1965) had six years earlier, emphasized that college reading testing depended on the use of the same four or five tests which were current from fifteen to twenty years before and which measured some kind of reading in terms of the constructs rate, comprehension, and vocabulary. Farr (1971) in his analysis of reading comprehension tests concluded that the tests attempted to measure reading comprehension as a thought-getting process which is

generally unrelated to specific reading purposes. The
tests were developed as if there was a well-known
theoretical construct called reading comprehension.

Spache (1969) outlined the historical context
from which these tests developed: rate of reading was
considered as a separate aspect of reading behavior;
training in reading rate spilled over into the compre-
hens on area; practice in answering types of compre-
hension questions will transfer to permanent gains in
comprehension skills; and comprehension was thought of as
a relatively constant abilit egardless of the materials.

McDonald (1971) re-emphasized that reading per-
formance should focus on reading versatility. This should
be accomplished in a number of task-oriented situations
and must be supplemented with other kinds of assessment.
Farr (1971) concurred that "the only validity of any
importance is how well a test predicts a student's
ability to perform functional reading tasks" (p. 196).

Nacke (1971) reviewed the various methods of
assessing flexibility in reading. He identified four
major issues:

1) the difficulty in measuring the strategies
   involving the constraints of the faster
   reading rates;

2) the perennial problem of measuring the rate
   of comprehension when considering flexible,

efficient reading;

3) the question whether in the measurement pro-
cedure there should be variation in the pur-
pose of reading or in the difficulty and
type of materials; and

4) the development of an index or scale so that
the various rate and comprehension measures
can be integrated into the construct of
over-all reading ability.

If our conceptualization of mature reading is to
emphasize flexibility and efficiency in reading tasks,
then it is imperative to develop adequate tools to
measure the behavior. The tools presently available are
in need of further refinement and development.

Measuring the competence of adult readers has
run into similar difficulties. It is unlikely that an
adult reader will perform proficiently when tested with
materials outside of his functional context (Braun &
Neilsen, 1973). Diagnostic and testing procedures must
be developed to allow for adequate and appropriate and
reliable measures to be taken.

Classroom Organization of College
Reading Programs

In her review, Entwistle (1960) noted that
required study skills courses show the smallest gains
in criterion performance. The evidence on students in

required courses indicated that required courses at the
college level frequently involved students of rather
probationary status.

Brigham (1959) did not concern himself with the
voluntary nature of the reading program. He indicated
that class organization by groups is probably most
efficient. Group composition should be along the lines
of similar achievement ranges in reading and types of
difficulties and goals. Flexible grouping patterns were
seen as essential in order to be able to accommodate
different rates of progress and more specific individual
needs. Brigham recommended that the size of classes
should range from 8 to 12 students depending upon the
relative extent of the reading problems of the indi-
viduals within the group and the training and competence
of the instructor, but that it is possible to accommo-
date from 15 to 20 students at one time.

Brethower (1968) described what he called the
cafeteria course because the organization of the courses
was very flexible, allowing the students to come and go
as they wished. Within limits, the students are allowed
to set their own goals and define their own schedule.
It is a highly individualized course in developing read-
ing study skills. Students determine goals, content,
sequence, duration, and even the details of the teaching
materials used in the course. The course organization

attempts to provide the students with materials that
they require to do their work. The course is voluntary,
non-credit, and free. It is usually taken in addition to a
normal course load.

Maxwell (1971b) argued that there must be a place
in developmental reading programs for counseling in order
to help students acquire the insights which must precede
and accompany any dramatic changes in their reading and
studying behavior. Spache (1951) in discussing trends
in reading programs suggested that there would be a
decreasing use of mechanistic and drill procedures
accompanied by an increasing dependence upon counseling
and psychotherapeutic techniques. Spache argued that
the implication in this was that the primary purpose of
such reading courses was to improve the adjustment of
the student to the demands of college life.

Ridenour (1974) outlined the procedures and
structure for an individualized reading and study skills
program. In line with Mzxwell's recommendation for pro-
viding counseling, Ridenour changed the name of
instructor to counselor in order to keep the role in
perspective. She recommended close contact through
conferences and small group discussion as incentives to
keep students most deficient in reading skills from
dropping the course. Ridenour recognized the need for
some students to have a continual one-to-one relationship

through tutors as well as immediate help and feedback.

Anderson (1971) recognized three variations in how to individualize a reading program:

1. To help the students read a textbook;

2. To help the student with special reading workbooks and manuals;

3. To help the student in terms of reading skill deficiencies and needs.

Regardless of the plan or combination of plans used for individualizing a reading program, there are certain concepts and aspects of the procedure that are similar: learning begins where the student is; reading is an independent activity; and, students learn at different rates and in different ways. Thus each student's program should be tailored to specific needs with a continual evaluation process in order to monitor the progress of each student.

Cooke and Farrow (1975) espoused their credo: "We believe that individualized instruction is the only viable route to meeting the range of needs found in our classrooms" (p. 214). They explained that most teachers lacked "the diagnostic sense" to tease out a student's pattern of needs and complained of the sterile skills materials on the market. In essence, their message was that individualized instruction was probably more difficult to do well but the satisfaction that it gave was

well worth the energy and the effort expended.

To conclude this topic of classroom organization: the wide variety of instructional needs in college reading courses became very evident in the 1960's with open admissions policies and greater educational opportunities (Schick, 1962). The trend towards individualization was noted by many instructors and researchers in the field. Henderson (1976) reported the wide diversity of procedu s. all placing themselves under the rubric of individualized instruction. In a survey reported by Olsen and Swiss (1976) 40 percent of the community colleges considered individualization to be the strongest aspect of their reading programs.

One important area included in many individualized programs was counseling (Spache, 1959; Maxwell, 1971, 1972). Olsen and Swiss (1976) reported that 87 percent of two-year colleges made individual counseling and conferences between students and reading program staff an integral part of the program. Apparently, with an expanding technology, increased attention on identifying individual deficiencies through standardized and clinical diagnostic procedures, and a felt need to provide counseling services to help overcome some of the barriers causing reading and study difficulties, we are in an era when instruction is being developed to meet individual needs.

Evaluation of Programs

The criteria used for the evaluation of a reading
program should be seen in the perspective of why the pro-
gram was established and what it is expected to do in
terms of the goals and objectives of the program. The
criteria should be measurable logical outcomes of the
process being developed in the course.

Worth (1956) after conducting a survey of twenty-
one junior colleges, suggested the following four cri-
teria in order to evaluate the validity of the goals of
a junior college reading program:

1. The program must fit into the philosophy
   of the institution where it is and must
   enhance the progress and prestige of that
   college;

2. The program must result in more effective
   living and learning for the students taking
   part;

3. The program should remain in touch with
   research concerning the teaching of reading
   and apply all that is applicable in the
   process of the various courses; and

4. The reading teacher should influence the
   attainment of the goals of the program, i.e.,
   the personal qualifications of the person
   responsible for the program should affect

its degree of success. ..

McDonald (1957) explained that the complexity of reading means that a reading improvement program would have many equally complex outcomes. This would augment the difficulty of adequately evaluating the effects of reading programs. Nonetheless, fully aware of the complexity of the reading process, Robinson (1950) strongly asserted that "academic performance is clearly the sine qua non for the validation of remedial reading courses, particularly in liberal arts curricula where by far the largest portion of scholastic agenda comprises reading or related activities" (p. 83). McDonald realized that there are many valuable outcomes of college reading programs which have nothing to do with academic grade-point averages. Also, many of the goals of reading programs are not directly related to or capable of immediate translation in grades.

Regardless of the weaknesses of academic marks, they have become the standard accepted measure of student achievement at college. Many administrators, instructors and students operate on the assumption that there is a relationship between the reading programs and academic achievement. In fact, many of the programs were established in response to the influx of students unprepared to do college-level work. The programs were developed to help these students who could not do college work.

Thus it is conceptually logical for studies to make performance a criterion of the success of reading and study-skills programs. One of the difficulties encountered is that these studies have not consistently been properly controlled and evaluated.

Entwistle (1960) found it intuitively appealing that improved study habits would lead to increased academic effectiveness. The literature abounds with experiments on transfer of training which show that some very general kinds of study skills, such as reasoning, reflective thinking and ability to memorize can be taught and effectively transferred to new situations. As early as 1945, Entwistle (1960) noted that it was becoming clear that remedial reading courses at the college level were probably helpful.

In her review of twenty-two evaluations of study-skills courses, Entwistle (1960) found that even though the criteria used to determine the effectiveness of the courses were different, they all included a measure of overall scholastic average. She indicated that to continue checking grade point averages for a number of semesters following the course with adequate controls would provide the best evaluation. Other criteria which could be used with care were drop-out rate in the course, scores on pre- and post-reading tests, and study habits inventories.

Maxwell (1963a) pointed to a study which evaluated the grade improvement by subject and found that college students having taken a reading improvement course achieved higher grades in social science and literature but not in the sciences and mathematics, as compared to a control group. This indicated a need to look more closely at academic improvement rather than at over-all grade point average.

Brethower (1968) stated that for his cafeteria course the general criterion was in terms of grade point averages and percentages of students remaining in school. The general objective of the course was to help the students make use of their academic opportunities. Within the course itself, however, individuals developed their own goals which might have little to do with grade point average. If an individual's goals were met, then for him the course is a success to the extent that the student's goals were appropriate. The course was seen as a living system and was evaluated in terms of what it did; change being one of the steadfast goals (Brethower, 1968).

Maxwell (1972), interested in developing statistical procedures which would adequately evaluate living systems, as Brethower (1968) described his cafeteria course, came up with Bayesian techniques. Maxwell stated that because of the individualized nature of the reading improvement programs, "even if we could be sure

that our pre-tests reflected the students' abilities.
and problems, it would be difficult to envisage a single
treatment program that would meet each of their needs,
nor could we reasonably expect that by administering a
standardized post-test we would find statistically sig-
nificant changes" (p. 4). Since treatment plans were
foc ;ed on different needs, post-testing would have to
control for this. At the present time, this is beyond
the capability of our standardized instruments.

She concluded that the most practical, most
expedient measure of a program's effectiveness was
attendance for a six-week period since it took at least
six weeks for the average student to show progress.
Ketcham (1963) recommended using the drop-out rate as a
criterion measure of reading courses.

Maxwell (1971a) wrote that it was generally
accepted as a foregone conclusion that if courses on
study skills were offered to students deficient in those
skills, their academic records would improve. However,
she pointed out that very few researchers or reading
programs have systematically and reliably assessed grade
point averages in recent years. Maxwell emphasized that
objectives should be clearly defined and specific cri-
terion tasks consistent with the objectives of the
program be described. Most important, r.ading programs
should meet the needs of the individual students who

want help and should assist them in meeting their goals within appropriate limits.

Anderson (1975) clarified the importance of grade-point average as a criterion measure of a program's success and raised the possibility of excluding science and mathematics from grade point average in order to have a more valid measure of the effectiveness of the program. The main reason given for excluding science and mathematics was because reading improvement courses ignore these areas. He also suggested using additional criteria such as attendance, classroom interaction, drop-out rate, grade point average over more than one semester, pre- and post-test gain.

Burgess, Cranney, and Larsen (1976) indicate that it was important to keep in mind that grade point averages were only part of a larger context of possible outcomes. They report that the actual amount of change in relation to grade point average would be very small, but nonetheless significant. They questioned whether this might not be due to motivation factors.

Farrell (1975) reported an investigation by Stelle Feuers in 1969 which related reading comprehension and academic achievement in a community college of Los Angeles. There were no significant relationships between the college grade point average and reading comprehension scores as measured by the Nelson-Denny and

the Davis Reading Test or between grade point average. and vocabulary. The correlations between the grade point average and vocabulary were significal at the .01 level but not substantial enough to predict academic success'. The reading comprehension and vocabulary scores accounted for less than 10 per cent of the variance in college grade point average.

Fairbanks reviewed 79 college reading programs to determine the factors which contributed to grade point averages (Farrell, 1975). She noted that programs which significantly affected student achievement, had a few common elements: they tended to stress how to get the main idea from paragraphs and longer selections; how to differentiate fact from opinion; and how to recognize and interpret i. ferences. The program tended to be voluntary with no credits, lasting for 40 or more hours with individualized coursework in which the students had a hand in their own diagnosis and selection of materials. An interesting finding was that study courses were not found to be an important factor in making a program successful as indicated by improved grade point average.

Nevertheless, the majority of studies which, do use grade point average as the criterion for evaluating the effectiveness of reading improvement and study skills courses do show an increase in grade point

average which persists over time (Entwistle, 1960,
McDonald, 1957, Wright, 1962, Tillman, 1973, Burgess
et al., 1976).

The statistical design of many of the evaluative
studies has been problematic (Anderson, 1975, Tillman,
1973, Maxwell, 1972, Entwistle, 1960, and others). There
was very little control for the Hawthorne effect,
regressio `` the mean, and other spurious effects.
According to some estimations, more than 80 per cent
of the studies dealing with the evaluation of progress
in reading have serious contamination effects due to
Hawthorne and placebo effects (McDonald, 1964). Wright
(1962) found only eleven of thirty-two studies eva uating
the relationship between reading improvement and grade
point average with comparable control groups. One of the
major variables not controlled for was motivation
(Maxwell, 1972). Maxwell (1972) also pointed out that
the statistical design of many investigations assumed a
normal distribution while the population was of less
able readers.

An article entitled "How Much do Community
College Students Learn from their Textbooks" by Spring
(1975) should be reviewed in light of the previous dis-
cussion. She found that over 50 per cent of students
at all reading levels, such as the independent,
instructional, and frustration levels as def`` i by the

Bormuth criteria of the cloze test, felt that they could get more than half of the information of the test elsewhere. When reading level in a text was related to the grade received in the course, the following breakdown was found:

TABLE 1

READING LEVEL, STUDENT ASSESSMENT OF TEXT,
AND COURSE GRADES*

Reading Level on Cloze	N	Student says test is difficult (per cent)	Course Grade			
			A	B	C	Other Grade
Independent	88	14	47%	36%	11%	6%
Instruction	30	23	50%	33%	10%	7%
Frustration	36	39	39%	33%	25%	3%

*Source: Spring, K. W. How much do community college students learn from their text books? Journal of Reading, 1975, 19, 131-136.

Spring concluded on the basis of her data that the text apparently played a limited role in the course, attesting to the primacy of the teacher's role and other information sources the student has available.

Cline (1972a, 1972b) reported that eleven of seventeen textbooks were written above the reading levels of 50 per cent of the students who used them in a community college. McClellan (1971) found that of

twenty community college textbooks analyzed, eight had
readability levels of 16+. Of these eight, three were
being used by students in non-academic or remedial-type
courses. Four other textbooks had a readability level
score of between 13-15 grade levels. The wide range of
skills of adult level students requires an understanding and
knowledge of the materials used for developing content
and concepts in courses.

Spring's results '75) in no way lighten the
indictment against community college texts that Cline's
study (1972a, 1972b) and McClellan's results (1971) bring
to light.

Profile of College Reading Teacher

Many of the reading and study skills courses have
been incorporated into English departments or into newly
developed academic skills areas or reading improvement
programs. Instructors have come from a variety of disci-
plines with varied qualifications to teach reading and
other study skills.

Brigham (1959) addressed himself to the standards
f professional experience and educational background for
staff members in a college reading program. He was
specific in preferring someone with either a B.A. in
English or a B.S. in Education with emphasis in the area
of Language Arts or English. On the graduate level, a

minimum of three courses in the psychology of reading
with a graduate degree in either education, psychology,
or counseling and guidance would be desirable. Teaching
experience at two levels and some background in a
clinical setting would prepare a staff member well for
the rigors of working with college students.

Braam (1963b) reporting on the professional needs
of the reading teacher at college adult levels of
instruction noted more personal qualities and attributes
that he felt would make a good reading teacher. These
were as follows: 1) to like children or students; 2) to
understand and accept students with all of their strengths
and weaknesses and sometimes irritating ways; 3) to enjoy
working with people; 4) to be curious; 5) to remain
flexible; and 6) to be enthusiastic about teaching
reading.

The professional training of a reading teacher
should be in line with the recommendations of the
Committee on Professional Standards prepared by the
International Reading Association. It would involve
coursework including theoretical as well as practical
laboratory or practicum experiences. A professional
reading teacher must possess a sound understanding of the
reading process, hopefully, as a result of the training
and experience (Braam, 1963b).

In an interesting study by Kroenke (1971) survey-
ing the importance of various aspects of the training
procedures of reading specialists already in the field,
the specialists ranked the following areas of knowledge
or specific skills in which they should be most thoroughly
informed in order to operate most effectively: 1)
psychology of reading; 2) psycholinguistics: analysis
of words; 3) phonics and phonemics; 4) individualized
reading procedures; 5) linguistic structure of English;
6) grammar of English language; 7) study-type reading;
8) paragraph organization; 9) programmed procedures, and
10) initial teaching alphabet.

Teaching experiences, laboratory teaching experi-
ences, and inservice training were all considered very
important aspects of their repertoire of skills and com-
petencies with which the reading specialists functioned.
Those who had the teaching experiences felt more comfort-
able teaching college level reading than those who had
not had such experiences. Kroenke (1971) from the basis
of his study raised several questions concerning the
importance of course work in literature for children and
youth and statistical procedures and methods of educa-
tional research because of their ratings at the bottom
of the list. He also questioned whether linguistics
should be a part of the program for preparing reading
specialists.

Schnell (1974) in a survey of community college

reading teachers came up with the following profile of

the average reading teacher: female (76 per cent), over

forty-five years of age (49¾6 per cent), teaching both

reading classes and laboratory sessions (51 per cent),

does not use a workbook (85 per cent), works with 100 or

fewer students per semester (63 per cent), and gives

individual help if needed (69 per cent). The survey

(Schnell, 1974) indicated that on the average, community

college reading teachers were highly educated: 99.94

per cent hold masters degrees or higher and 51 per cent

have more than twenty-five graduate credits in courses

on reading. This training is based largely in clinical-

diagnostic settings (49 per cent) and was excellent or

adequate in preparing them for the job (81 per cent).

The average teacher had been teaching at least eight

years (82 per cent).

The most important course work was thought to be

in the areas of psychology-counseling, content area read-

ing and study skills, language-psycholinguistics, how to

give workshops, and the internship. Schnell (1974) con-

cluded that nearly all the teachers surveyed felt that

former experience was more valuable than coursework.

Fry (1964) maintained that the best way to train

teachers for a reading improvement course was to give

them a reading improvement course. He also recommended

carefully supervised practice teaching.

- Otto and Smith (1973) emphasized that the adult
reading teache.s need to know most of all how to teach
reading. This would involve understanding the ultimate
goals of reading instruction, being familiar with a wide
variety of instructional materials, knowing how to
diagnose properly, how to teach word attack skills, how
to construct comprehension question. They recommended
the same course work and basic training in the funda-
mentals of teaching reading for all reading teachers in
place of the specific methods course for the various
levels of reading: The training would emphasize the
following points:

   1. the skills required for success in reading;

   2. the causes for reading problems;

   3. diagnostic techniques and procedures; and

   4. an introduction to the instructional
      materials.

Martin (1973) called for more supervised, appro-
priate field experiences for adult reading teacher train-
ing. Maxwell (1973) recognized the wide variety of roles
and the breath of knowledge that an adult reading teacher
must have to function efficiently and well. Vavoulis
and Raygor (1973) in a survey to determine a model
curriculum for the training of college and adult reading
specialists found that the respondents tended to favor a

pragmatic curriculum that included courses related to the treatment of learning disabilities at college, background courses in the teaching of reading and study skills, and in individualized instruction and educational practices. Interestingly enough, despite the present trend, low priority was given to the areas of counseling, language arts, and special education.

Materials and Techniques of College
Reading Programs

Mechanical devices, programmed instruction workbooks, and other special materials and techniques have been used for instructional purposes for many years in college level reading programs. There is no strong empirical evidence indicating that the use of such devices, materials, and/or techniques itself enhances the reading ability of students. These strategies are always mitigated by the instructor. Research findings on all levels of reading ability and the teaching of reading attest to the primacy of the teacher's role in the educational process of young people.

Research results investigating the use of mechanical devices versus not using these devices, special materials, or techniques are emphasizing an aspect of the process, such as, the value of the use or non-use of materials, devices, or techniques, that has very little to do with the actual goals of the

reading process. Thus there are an extraordinary number of spurious effects and unaccounted for variance that make the results very questionable.

Nonetheless, frequently the mechanical devices and techniques utilized in a reading program have an effect on the objectives of the program or are utilized because when used properly they seem to develop skills that are directly in line with the over-all objectives of the course. For example, throughout the 1920's, 1930's, and 1940's, mechanical devices such as the tachistoscope were heavily used for perceptual training in reading courses. The bias of the time period focused on developing fluid eye movements and improving the rate of reading in an attempt to improve one's reading skills. Buswell (1937, 1947), who had a very important influence on college reading programs, considered that improvement in the perceptual aspects of reading was the best way to contribute to efficiency in reading. The use of tachistoscopic devices ... ue common sense if the goals of a reading program were concerned with developing perceptual processes.

There is very little experimental evidence indicating what materials, mechanical devices, or instructional techniques are superior. The common assumption underlying this dearth of research is probably due in part to the concept that different people react differently to

reading process. Thus there are an extraordinary number
of spurious effects and unaccounted for variance that
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techniques are superior. The common assumption under-
lying this dearth of research is probably due in part to
the concept that different people react differently to

different materials, mechanical devices, or instructional techniques. Another reason is probably due to the difficulty in properly measuring the effects of the materials in relation to other materials etc.

The reports of special techniques that various instructors have employed with considerable success in the teaching of reading at the college level will not be reviewed. The reports are too numerous and, frequently, the success of the special technique is due to the interest and some personality quality of the instructor. A proper evaluation of these reports would be too difficult--the reports themselves are anecdotal and/or do not lend themselves to a rational assessment of their merits. Thus mechanical devices and workbooks will be reviewed.

Mechanical Devices

Mechanical devices have as their primary purpose the improvement of the rate of reading through perceptual training (Geerlofs, 1967). Transfer between perceptual operations and the more general skills for comprehension is assumed to take place. Gilbert (1959) found a lack of transfer of eye-movement training with tachistoscopic devices to reading performance. Interestingly enough, Holmes (1965) found that at the college level only 9 per cent of the variance in speed of reading was accounted for by such perceptual components as span of recognition and fixations.

In a review of twelve investigations measuring
non-machine reading courses against machine reading
courses, eleven of the twelve groups within the studies
which received non-machine training equaled or surpassed
the groups receiving machine training in the improvement
in the rate of reading (Karlin, 1958).

Various mechanical devices have been reported in
conjunction with college reading improvement courses.
Geerlofs (1967), Leedy (1958), and Andrews (1956) noted
the use of tachistoscopic devices, directional attack
control instruments, and accelerators in college reading
programs. According to the Geerlofs study (1967) there
were no mechanical devices used alone in the courses.
They were mostly utilized in a reading program which used
many devices.

Gilmore (1959) found the three major types of
mechanical devices used in speed reading training to be
the tachistoscope, reading pacers, and reading films, but
his article limited itself to a discussion of the
tachistoscope. He underscored four major assumptions
for using a tachistoscope in a reading course: to
lengthen the span of recognition; to shorten the fixation
time; to instill the concept of reading by phrases; and
to provide the inherent motivation peculiar to mechanical
devices. Gilmore was quick to point out the dis-
advantages as well: there is no opportunity to read

continuous text so the reading is unnatural; there is

very little commercially available material; and it is

difficult to use for group instruction. He quoted a

review of the use of the tachistoscope as a reading

device by Sommerfeld:

> The principal conclusion to be drawn from this
> survey of research is that no significant rela-
> tionship has been found between measures of
> tachistoscopic span and the measures of reading
> ability employed. It follows by implication
> that quick exposure training, in and of itself,
> cannot influence the process of reading except
> as certain secondary factors, such as motivation,
> are involved. (Gilmore, 1959, p. 56)

Gilmore (1959), nonetheless, concluded that it was

quite possible to understand this in light of the fact

that the tachistoscope had not been used to the best

advantage in the typical college reading program.

Johnson (1959) advocating the use of reading

pacers concurred with Gilmore (1959) that the effective-

ness of a reading improvement device will vary greatly,

depending on the resourcefulness of the person using it.

Johnson based his entire argument on the assumption that

attitude is almost everything and to improve a poor

reader's speed is to improve his attitude (p. 36). he

quoted no research to back up his position.

Carroll and Thelberg (1959) were more thorough

in their presentation of reading films. They listed

seven ways by which reading films were assumed to be

able to improve an individual's reading rate: by

decreasing the number of regressions; by reducing the
length of fixation; by increasing the span of recognition;
by perfecting the return sweep; by prompting more
rhythmic saccadic movements; by decreasing subvocali-
zations; and by increasing motivation. Carroll and
Thelberg reviewed the various limitations: the diffi-
culty of individualizing instruction; good readers do
not tend to have rhythmic eye-movements; and the films
provoke headaches. The justification for the use of the
films was purely anecdotal.

Perry (1959) warned against using devices that
focused primarily on the mechanics of reading because
of the difficulties of transfer. However. he noted the
usefulness of some of the mechanical exercises and the
motivating aspects of using gadgetry. Brigham (1959)
also cautioned against the over-use of machines because
of the possible danger of emphasizing the mechanics of
reading to the de-emphasis of better thinking skills that
are basic to reading and study improvement. Brigham
(1959) felt that the development of reading in different
kinds of text materials, newspapers, magazines,
recreational materials, workbooks, as well as a variety
of mechanical devices, and a teacher using various
techniques, give a program a range and depth of purpose
and applicability to most students.

Courtney (1966) reviewed the rise of instrumentation in reading and concluded that there was general agreement as to the place and effectiveness of instruments in the reading program. However, the various studies reviewed by Courtney and others before him do not indicate that there is any greater improvement in reading skills, speed, or comprehension through the inclusion of mechanical devices in a reading program than is achieved through other techniques. Courtney (1966) outlined the recurring theme of the literature· any kind of controlled reading device improves reading ability but no more than any other method or material; the mechanical devices provide motivation; and it is probably the motivation that accounts for the reading improvement.

Still, newer instrumentation has become more available. The use of computers, television, tape recorders are being used more in the teaching of reading at all levels of instruction (Kahn, 1976). Even the most ardent admirers of teaching hardware usually concede that it will not likely result in complete automation of reading instruction. There is reason to hope that this new technology will enhance the teacher's efficiency and, thereby, improve the instructional process.

Workbooks

Publishers are offering more and more materials for use at college level reading courses. Presently there are more than one hundred reading workbooks available for the teaching of reading in college level reading programs (Ahrendt, 1975). The majority of college reading programs make use of workbooks either alone or in conjunction with other materials (Ceerlofs & Kling. 1968, Miller, 1957).

Miller (1957) reported that in an extensive survey of over four hundred colleges, 55 per cent indicated the use of a reading workbook of some kind. Some programs listed a single workbook as basic to their program, while others listed several workbooks. Only fifty-one programs did not list any workbook at all. Miller attributed this to the trend towards greater individualization of instruction in reading programs.

Miller (1957) identified certain criteria which should be considered in the selection of a workbook for a reading course. He emphasized that workbooks should be evaluated in light of his criteria and the objectives of the course in which they would be used. Criteria included the following: type of binding. i.e., paper or cloth; length and portion devoted to exercises; type of organization, i.e., amount of exercises, degree of theory, types of exercises, length of book. He

classified the various exercises according to their
objectives   eye-span exercises; number and letter
recognition exercises; work meaning and vocabulary
exercises; phrase and sentence meaning exercises; skimming
or idea reading exercises; exploratory or continuous
reading exercises; study or thinking exercises; and
critical or analytical reading exercises.   Also included
was data on special features of the workbook such as
removable answer sheets, standardized patterns for tests
and scoring, established and identified levels of read-
ing difficulty, provision of an instructors manual,
provision of scoring keys, provision of time-rate con-
version tables, and provision of charts as visual aids
to motivation. Also data on the extent of use of various
workbooks from a survey of 430 colleges was provided.

Bliesmer (1957) made an annotated listing of
materials for the more retarded college reader. Bliesmer
included normal bibliographic information with a brief
review of the skills covered in the exercises and the
difficulty level and price of t'e material. He reviewed
a total of fourteen workbooks. There were well over
eighteen skills mentioned that the different books cover
from word attack skills to higher level thinking and
interpreting skills, which should provide a degree of
flexibility for an instructor in selecting a book for
whatever objective.

Ironside (1962) made a critical analysis of
workbooks published within the ten year span of 1951-1961.
Of twenty workbooks reviewed only eleven focused on
aspects of word recognition or perceptual training.
Both the method of developing these skills and the
rationale or theory behind the method were widely
different in the eleven books. Apparently, the broaden-
ing of the objectives of college reading programs in the
1940's and 1950's to include comprehension skills had
been at the expense of the more basic word recognition
and perceptual skills.

Ironside (1962) expressed concern with the
problem of transfer in the training of word recognition
and perceptual skills to the reading process. There
were no exercises teaching transfer to real reading
materials. The student had to make the leap himself or
have a perceptive teacher who could guide him over the
hurdle. To help overcome this, Ironside recommended
doing word recognition exercises within the context of
meaningful material.

This concern was shared by Berg (1959). who
stated that one of the primary purposes of the reading
improvement programs was to present a series of reading
skills in a more or less coordinated fashion. For a
skills program to be effective, the activity must be
both meaningful and purposeful with some kind of

understanding as to how an exercise helps to produce certain desired results. Berg termed understanding a basis for transfer.

> Not only should the transfer value of a particular
> exercise be understood, but exercises should be
> presented in such a manner from each to the next
> is seen [sic] as cumulative toward the purpose of
> the activity. (Berg, 1959, p. 116)

The selection of materials should include a wide variety of exercises that illustrate and give practice to each particular skill.

Donna Paterson of Rutgers University in an investigation recently finished examined college reading workbooks as to their readability, the scope and sequence of their reading skills, and their topical interests. She found that workbooks tended to be either theoretically or practically oriented, not both.

Programmed learning materials have been a fairly recent development in reading materials at the college level. They have been an important development in the individualizing of programs and have an extensive theoretical background based primarily on laboratory procedures used to shape the behavior of pigeons (Kahn, 1976). Programmed instructional materials are not dependent necessarily upon use with mechanical devices (Kopel, 1965), even though the stimulus-response paradigm of most workbooks is the basic paradigm of most important programs (Kahn, 1976). The main characteristic of these

materials is their organization pattern of short, sequential, self-correcting units.

The programmed reading workbooks focus primarily on vocabulary development (Fry, 1964), prefixes and roots (Brown, 1964), and the other basic reading skills. The instructional paradigm of these materials are fairly limited in application. They are not independent systems of instruction and should function mainly as drill-and-practice systems to reinforce association and concepts previously taught in classroom interaction (Kahn, 1976).

The scarcity of commercial self-instructional programs in the 1950's and 1960's (Rankin & Smith, 1961) has given way to many more programmed workbooks and teaching machines for college students and adults in the 1970's.

There is a surprising lack of textbooks for college level reading courses. The materials used in most college reading programs are a conglomeration of workbooks, mechanical devices, and content course textbooks. There is little empiricial evidence indicating the superiority of mechanical devices over other techniques or methods of instruction in the teaching of reading. Yet, there is general agreement as to the place and motivating impact that the machines have in a reading program at the college level. There is a disparity in the literature on the actual use of workbooks. Miller (1957) reported in a survey of 400 colleges that 88 per cent indicated that a workbook was used in the reading

or study skills program while Schnell (1974) in a survey
of community college reading teachers found that 85 per
cent indicated that they did not use a workbook in the
reading courses that they taught. This discrepancy may
be due to the different targets of the two surveys—
colleges and community colleges; an indication of a trend
away from the use of workbooks in the 1970's; the emphasis
of Schnell's survey was on individu. reading teachers,
not on the entire program. Nonetheless, there were
a wide variety of different workbooks in use with varying
skill exercises. Ths selection of a workbook for a
course should involve the consideration of some objective
criteria. Various riteria were suggested in this review.

Survey of College Developmental Reading Programs

In interpreting the data from surveys, it is
imperative to put them in the perspective of the trends
of the historical context in which they were completed.
In the 1950's, professional groups concerned with reading.
in the upper levels were formed, most notably the National
Reading Conference. Surveys during the period showed a
gradual growth in special reading programs (Hill, 1971).
The most common upper level reading program was the
remedial reading class or program: college teachers
still felt that developmental reading instruction was
a subject for the high school while high school teachers

relegated the subject to the elementary level.. More
and more reading rate improvement courses and reading-
study skills centers integrated their functions during
the late 1940's and early 1950's. Also, the developmental
reading skills classes were beginning to appear with
increasing frequency (Hill, 1971).

Hill reported that under close scrutiny in the
secondary school the classification of the various pro-
gram types, such as developmental, remedial, rate-study
skills, did not always indicate distinct programs. In
fact, developmental classes, remedial programs, and
rate-study skills centers tended "to overlap considerably
in curricula, objectives, materials, and methods
employed. . . . There appears to be greater variation
in program names than in program content and operation"
(Hill, 1971, pp. 24, 26). Hill emphasized that too fre-
quently "the availability of instructional materials
tends to shape if not dictate program curricula and
instructional procedures regardless of the name or
objectives of the program" (p. 26).

Thus, there are severe limitations on the informa-
tion that is derived from a survey. It must be assumed
that the stated objectives of a program are the goals
that one pursued within that particular program. Similar
objectives among various programs does not necessarily
indicate similar instructional methodology or similar

materials. Other limitations include the dubious
accuracy of measurement devices (McDonald, 1971, 1965,
1960, 1958, Kingston, 1965) and the difficulty of iso-
-lating cause and effect variables without undue con-
tamination in the interpretation of the data. Thus
surveys more than anything else tend to indicate trends
and overall developments in the teaching of reading.
They should not be used to prove the efficacy of one
particular method, material, or test.

Causey (1956) completed a comprehensive survey
to determine the development of reading programs in
colleges and universities in the United States. Of five
hundred and seventy-five colleges replying to the question-
naire, four hundred and eighteen reported reading improve-
ment programs in progress as compared with two hundred
sixty-eight a year earlier. Enrollment in courses was
reported as 57,052 students as compared with 33,431 a
year earlier. Causey's survey determined the titles of
courses (Reading Improvement, Developmental Reading,
English, Reading Laboratory), the departments responsible
for instruction (English, Education, Psychology, Reading
Clinic, Communications, Humanities), the length of the
courses (more than 18 weeks, 18 weeks, 15 weeks, 12
weeks, 10 weeks, 9 weeks, less than 9 weeks), the amount
of credit given (5 hours, 3 hours, 2 hours, 1 hour, no
credit), the number of classes per week, and the various

workbooks and instruments used.

Andrews (1956) in one of the very few surveys in the literature reporting solely on junior college reading programs found that his request for information about the techniques used to teach reading was interpreted as being a request for a list of equipment and other materials used. Items of equipment and other materials that were repor.ed were in order of frequency the following: textbook/manual, tachistoscope, accelerator, reading films, and tape recorder. The procedures and types of exercises reported were in order of frequency the following: individual work, frequent timed reading exercises, frequent comprehension tests, lecture/discussion, vocabulary development work, eye-movement exercises, and some others. He concluded from his survey that the typical junior college program

> utilizes some sort of textbook and manual or workbook, which generally are combined, involves some explanation and discussion of the problem of reading improvement, uses frequent timed reading exercises, and utilizes a tachistoscope and reading accelerator. (p. 114)

Woods (1957) reported a survey of college reading improvement programs in institutions offering teacher training in Wisconsin. Over 600 individuals were enrolled in college self-improvement reading programs during the first semester of the 1955-1956 school year. There were approximately fifteen students per class.

The classes were both voluntary and free of charge and lasted about 40 hours in duration. The instructors were recruited from a number of departments among the various institutions. In addition to the speed and comprehension aspects of the reading program, a majority of them included vocabulary and study skills in their curriculum. Tachistoscopes, reading rate controllers, workbooks, and reading films were the most frequently mentioned instructional aids.

Leedy (1958) compiled an extensive survey of ninety-two colleges and universities with the question-naires completed by the directors of the reading improvement programs. The range of the length of the reading programs was from eight hours to ninety hours with a median of twenty-eight hours. The use of mechanical devices was reported by the majority of directors, especially the tachistoscope and various types of accelerators. A number of those surveyed indicated that they developed many of the materials used in their courses. Eighty-eight of the ninety-two respondents indicated the use of standardized reading tests in the diagnosis and evaluation of their students' performance. The tests most frequently used were the Cooperative English Test: Reading Comprehension, Diagnostic Reading Test, Iowa Silent Reading Test, Nelson Denny Reading Test, SRA Survey, and California Reading Test. Over half

of the programs reported used informal testing procedures.

Leedy, putting his survey in a historical perspective,

noticed a shift in emphasis from mere speed in reading

toward the improvement of comprehension, flexibility in

reading, and study-skills and vocabulary training. The

concept of reading improvement at the college level was

broadening to include a developmental aspect from which

all students could benefit.

Colvin (1961) investigated the nature, extent, and

trends in reading programs and services for students in

the seventy-five accredited colleges and universities of

Pennsylvania during the academic year, 1957-1958. He found

that the typical reading program was under the aegis of

the Guidance and Education Departments and was called

either Developmental Reading or Reading Improvement.

Classes met one hour weekly for one semester of about

fifteen weeks. Standardized reading tests were used in

the selection of students even though the course was open

to all undergraduates as a non-credit course. The program

focused on a skills-drill approach to reading speed,

comprehension, vocabulary, and study skills. Standardized

testing and informal procedures were used in the

diagnosis and evaluation of students. Two or three

commercial reading manuals or workbooks were used for

practice on speed and comprehension. Less than ten per

cent of class time was devoted to machinery. In that

time, the reading accelerator and the tachistoscope predominated. Course evaluations were done generally through standardized reading tests. Colvin found that the greatest weaknesses of most programs were the lack of time and personnel, and the voluntary status of enrollment.

From the data of this survey, Colvin (1962) constructed an hypothetical "ideal" college program. Colvin was careful to detail many different aspects of the program including the staffing, training of personnel, credit-status, objectives, materials, methods, curriculum, and evaluation procedures. Some of his developments are relevant to this survey. They are the following:

1. The director and staff are trained through graduate courses in reading;

2. A basic objective of the program is to improve reading and study skills according to individual needs rather than to promise academic success as a result of the course;

3. Materials include mechanical devices (tachistoscope, film projector, and rate controllers), various graded workbooks, a selected library;

4. The method is student centered. About 10 per cent of class time is devoted to machinery; about 60 per cent of class time is devoted

to practice on selected materials and
exercises; approximately 25 per cent is
given to the establishment of goals, and
this leaves about 5 per cent to summarize,
record results, and to plan;

5. Comprehension, speed flexibility, vocabulary,
and study skills are the major areas of
reading receiving attention;

6. Evaluation of a student's progress is a
continual process and can be seen over-all
through pre-course and post-course reading
tests; and

7. There are five class hours a week with credit
and normal charges.

Lowe (19.2, 196.) made a survey which had as one
of its purposes the determination of the number of
colleges and universities of the state of Virginia
offering reading improvement programs. Twenty-eight
institutions reported that they offered such programs
with a considerable variety of workbooks, machines,
tests, and other materials being used. Lowe (1963)
found that the que tion most of the respondents of the
questionnaire wanted answered dealt with what method,
material machine, or test to use in a college reading
program and how high a reading rate one could attain.

Thurston (1965) conducted a survey in Louisiana
and Mississippi of predominately white, both state and
private institutions of higher learning. He found no
consistency in any phase of the college reading programs.
He noticed a tendency for programs directed by reading
personnel to use a variety of methods and materials while
those without backgrounds in reading used less flexible
methods and more "packaged programs."

Geerlofs (1967) developed a questionnaire in
order to determine the relationship between the objec-
tives and practices in college and adult reading programs
throughout the nation and recommendations found in the
literature. The survey included ranking the objectives
of the course, specifying the selection procedure of the
students, indicating the use of test, length of programs,
the use of class time, the class size, the materials and
mechanical devices used, the cost of the course, and
the homework requirement. Geerlofs concluded that there
was a gap between theory and practice in teaching reading
at the college level, but that in a omparison with less
recent surveys there were some encouraging signs. There
seemed to have been a shifting of emphasis from per-
ceptual training and dependence on machines to the
development of comprehension and the use of books.

In a unique study, Seibel (1966) conducted an
extensive survey of testing practices and problems of

junior colleges in the United States. He concluded that standardized tests are widely and extensively used in both public and independent junior colleges. Some of the problems of the test procedures at the time of the study were the lack of appropriate norms, difficulty in locating or selecting appropriate tests, and inadequate use of test information because of a lack of training and/or understanding of what the results meant. There was a felt need by the junior college staff surveyed for additional kinds of tests to meet some of the evaluation needs.

Sweiger (1971) conducted a survey of reading programs of junior and community colleges throughout the country. She found that the Nelson Denny Reading Test and The Diagnostic Reading Test were used by approximately 70 per cent of the respondents. She found that of the twenty most popular textbooks used in reading courses, only five concentrated on reading in the content areas and two included exercises that presented subject matter from college disciplines in a way that students would find when enrolled in the actual courses.

Fairbanks and Snozek (1973) found in their survey that 32 per cent of the students participating in college reading programs entered voluntarily. Forty per cent of the two year and 28 per cent of the four year colleges considered individualization of instruction

to be the strongest aspect of their reading programs.
Individual counseling and conferences between students
and reading program staff were included in the program of
87 per cent of the schools surveyed.

Comments on Community College
Reading Programs

Goodwin (1971) reported that more than half of
the junior colleges in his national survey require that
only students who are labeled as low achievers should
take corrective courses in reading improvement.

Evan and Dubois (1972) indicated that even with
such widespread implementation of reading programs at the
junior college level very few of the programs were being
evaluated. They quoted statistics that estimated up to
75 per cent of the low achievers admitted to junior/
community colleges withdraw during their first year.
They suggested that

> the paucity of evidence and the persistently
> high drop-out rate among those students enrolled
> in remedial courses casts considerable doubt on
> the effectiveness of a majority of the remedial
> programs now in effect. (p. 40)

A major factor in the success of any program is
accurate diagnosis of the students for whom the course
is intended. However, Goodwin (1971) found that over 50
per cent of the junior college remedial reading teachers
surveyed used the standardized reading test given at the
beginning of the course as a basis for their diagnosis

This lack of emphasis on diagnostic procedures has led
to a lack of differentiation between developmental and
remedial reading courses at the junior college level
(Evans & Dubois, 1972). Individualization of instruction
is difficult without a clearly defined starting point and
target area. Thus many courses in junior college reading
programs have a preselected group of skills to be
learned and materials that purport to teach those skills.
The a eas generally include comprehension, reading rate,
and study skills.

Evans and Dubois (1972) indicated that multilevel
materials were the common basis for the courses.

> The usual procedure is to assign each student
> a starting level based on his survey test
> score . . . and [he] proceeds through presented
> skill sequences. (p. 40)

Evans and Dubois (1972) called for a more rigorous,
more responsible diagnostic procedure and guidance and
counseling services for evaluating the various types of
low ability students in order to be able to select only
those appropriate for the available programs. They
differentiated between students with low mental ability
and those who have a measurable gap between demonstrated
ability and estimated potential. They advocated instruc-
tion which is aimed at particular weaknesses, not at
grade levels and skills sequences. One of the primary
differences between college and community college reading

programs is that college programs are able to focus
more on developmental aspects of the reading process
while junior colleges must concentrate their energies
on remediating deficiencies in the reading process.

Community and junior college programs are based
on limited empirical research of the current practices
and their effectiveness in helping the low achiever.
It is a heavy responsibility to be expected to meet the
needs and solve the problems of a? low ability, high-
risk students. Many programs have been established with
this goal in mind. Evans and Dubois (1972) suggested
that this is an unfair task and the programs must begin
differentiating between students who are of low mental
ability and those who are "underachievers." They recog-
nized that students with low mental ability may not be
helped by short term intensive courses in reading or
study skills and that ..ese remedial programs should be
required of the "underachievers." They did not address
themselves to the problem of the students with low
measured mental capabilities who are now a large pro-
portion of the students entering community colleges
through the open-door policy.

No association or journal speaks directly for
community college reading programs. There are no
specific bibliographic instruments nor a comprehensive,
professional research matrix from whic.. a coherent body

of related research could evolve.

The orientation of the typical junior college reading teacher is pragmatic, not theoretical. He is preferred to be a superior teacher and is seldom rewar d for research output (Kerstiens, 1971).

> Lacking background in research procedure and organized fact finding activities, practitioners tend to produce descriptive, inste d of experimental, research, vaguely worded reports, surveys of existin procedures and practices, and reports of programs that are "rarely examined in a professional manner." (Kerstiens, 1971, p. 5).

Most reading studies are not well designed enough to study whatever problem or area is under investigation (Kingston & Weaver, 1967). Consequently, most are statistically inaccurate or inadequate (Ray, 1964). A great many suffer from experimental bias or an over-enthusiastic approach that attempt to prove that a particula technique, approach, or program produces gains (Robinson, 1968).

Braam (1963a) identified four problems in college-adult reading research.

1. extremely restrictive samples;

2. no replication of results;

3. lack of collaborative research; and

4. absence of longitudinal studies.

A large proportion are tangential or not relevant to the teaching situation (Chansky, 1964). Only

about 28 per cent of the research investigations dealt
with the reading instruction process per se (Herber &
Early, 1969). Most research involved surveys and program
descriptions (Eurich, 1965), leaving much of the instruc-
tional practice to be based on personal judgment rather
than research (Harris, 1968).

- Kerstiens (1971) identified three areas badly
in need of research for community college reading programs:

1. Tests--Even though the junior college reading
   program is designed for the remedial student,
   rudimentary reading skills, such as phonics,
   pronunciation, word attack, word recognition,
   spelling, are often taken for granted or
   ignored by present standardized reading tests
   for adults (Nelson, 1965). There is need to
   develop special tests specifically for and
   normed on community college populations;

2. Materials--There is a dearth of studies on
   the effectiveness and on the development of
   special materials for the community college
   population; and

3. Programs and approaches.

Conclusions

College reading programs should be reviewed from
the perspective of the historical trends from which they

developed. There is very little data on community
college reading programs per se. This review has
focused primarily on college reading programs which often
cater to freshmen and sophomores who may be similar to
the freshmen and sophomores of the community college.

Criteria for evaluation of the programs and of
the individual success of a student are essential. The
criteria should be selected in terms of the overall
objectives of the course, the needs of the students
within the course, and the program's concept of the read-
ing process. Present trends indicate that the goals of
college reading programs tend to stress reading versatility
and reading comprehension through fairly individualized
procedures more than in the past. Counseling and guidance
are current aspects of many of the programs.

The diagnostic procedures used in college reading
are varied and should be selected in terms of the reading
program's goals and objectives. Standardized measures
of reading ability are the most frequently utilized.
These are best used in conjunction with informal and
more individualized diagnostic procedures. There is a
need for more refinement in the currently available
measuring devices of reading versatility.

The materials and techniques of college reading
programs are not founded on empirical evidence attesting
to their benefits but rather are a matter of the

available technology that seems to relate to the reading process. Materials are varied. They include all sorts of mechanical devices and a wide variety of workbook materials. There seems to be no question as to their importance and need in the college reading programs even though some of the more eminent researchers and practitioners such as Walter Pauk of Cornell reject their use.

The average college reading teacher is female, over forty-five years of age, does not use a workbook, works with less than 100 students per semester, and is highly educated with more than twenty-five credits in graduate courses on the reading process. Individual attention is given as needed.

The surveys conducted in the past have indicated rather gross trends of the college-adult reading programs. Present indications are that college reading programs are tending to provide fairly extensive counseling services in their attempt to better individualize programs and understand student needs. Overall goal objectives seem to concentrate most heavily on comprehension and higher level critical skills and versatility even though there is very little information about teaching reading in specific content areas in college programs

College and adult reading programs continue to evolve, notably to meet the needs of academically less well prepared adults who are increasingly seeking higher education. There are gaps between research knowledge and instructional procedures but the fact that the programs are being taught by highly-educated and experienced teachers and that the programs are evolving and using knowledge from research is encouraging.

CHAPTER III

PROCEDURE

This survey involves sending a questionnaire to the twenty-three different community colleges throughout New Jersey. The survey was designed to give us a more complete picture of how the reading programs function in the community colleges of New Jersey.

Sample

Questionnaires were sent to the twenty-three community colleges throughout New Jersey. The name and addresses of the colleges were found in American Junior Colleges, edited by Edmund Gleaser.

Construction of Questionnaire

The first eleven questions were taken from the questionnaire by Geerlofs and Kling (1968). These eleven questions were "designed to elicit answers to two basic questions: what were the program objectives; and what were the methods and materials used to meet these objectives?" (p. 5). The other five questions surveyed the training of the instructors, the departments by which the reading programs are conducted, and the kind of

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evaluation procedures used in the course. A copy of the questionnaire and the accompanying letter can be found in Appendices A and B.

Treatment of the Data

The answers to the questions were tabulated and comparisons were made between recommendations from the literature and the findings of the survey related to the following topics:

1. Type of program, i.e., type of student at whom the program was directed;

2. Hierarchical listing of objectives;

3. Tests used to evaluate progress of students;

4. Workbooks and other materials used in the course;

5. Technological mechanisms and mechanical devices utilized;

. Training and background of instructors; and

7. Evaluation procedures used to improve the course.

Two colleges responded but did not provide any data. One did not offer any such reading courses and the other geared its course directly towards an English composition class.

Summary

A questionnaire was mailed to the twenty-three
different community colleges of New Jersey in order to
derive data to better understand the functioning of
reading programs in these colleges.

CHAPTER IV

FINDINGS AND DISCUSSION

A questionnaire was sent to reading instructors in the twenty-three junior/community colleges of New Jersey in order to determine relationships between the objectives and practices of community college reading programs in New Jersey and theoretical developments and recommendations found in the literature. This was accomplished through the following perspective: answers were sought to the following questions through both the survey and the literature search:

1. What are the objectives for reading programs for New Jersey community colleges?

2. What are the most common materials, methods, and technological equipment used to meet the specified objectives?

3. What is the relationship between literature research findings and specified objectives and materials of the survey?

4. What are the qualifications of the instructors? Do they meet the standards recommended in the literature?

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5. What evaluation procedures are used to improve the course presentation and contents?

Findings of the Survey

Of the twenty-three questionnaires sent to instructors of reading courses at community colleges, fifteen were returned. This was a 65 per cent response from the New Jersey community college reading instructors representing their programs at the various institutions. Of these fifteen respondents, two did not provide any data: one did not offer any such reading course and the other geared its course directly towards an English composition class and did not answer the questionnaire. The latter institution indicated an interest in setting up a reading course and thus wanted the results of this survey to aid in setting appropriate objectives and selecting materials. Of the thirteen who answered the questionnaire, one respondent indicated that their community college had incorporated their reading course into a more general course that dealt with different content areas. This respondent completed the questions with information about the course that no longer was being held. Nonetheless, the data from the questionnaire was utilized.

The results of the survey will be reported by
devoting a separate section to each question on the
questionnaire. A copy of the questionnaire may be found
in Appendix A of this paper.

Question 1: Extent of practice of reading programs
and type of program

Fourteen of the fifteen respondents indicated
that there was or is a reading/study skills program at
their community college. One of the fifteen stated
that their entering students were of such high academic
caliber that a developmental reading program would be
superfluous and unnecessary. They had no developmental
reading program. The eight who did not return their
questionnaires apparently all offered reading courses
to their students as reported to this surveyor through
direct communication over the telephone. Of the fourteen
who indicated that they had reading/study skills programs,
one respondent did not fill out the questionnaire
because the course was directly tied into an English
composition class and put a strong emphasis on writing
skills and very little concern was given to developing
reading skills. The remainder of the analysis of this
survey will deal with the thirteen of the fifteen
respondents who answered the questionnaire.

Twelve of the thirteen instructors indicated
that the community college where they taught offered

developmental reading courses for students while the thirteenth used to but no longer offered a separate reading program or course. They had converted their reading course into a college learning laboratory which services all basic course areas.

Three respondents indicated that they offered speed reading courses for business executives as opposed to developmental reading courses for college students. The majority of community colleges in New Jersey did not offer reading courses for business executives.

Question 2: Objectives and goals or reading programs

Each community college ranked the various objectives for their reading programs. Average rankings for the objectives of the reading programs were computed and gave the following results from highest to lowest: comprehension, flexibility in approach to reading situation, vocabulary and word attack skills, rate, and study skills. See Table 2.

Two respondents linked different course objective rankings for different level reading courses. For both respondents the lower level reading courses had comprehension as the primary objective with vocabulary and word attack skills as the second most important goal of the course. For the higher level reading courses, one respondent indicated that flexibility in

TABLE 2

OBJECTIVES OF READING COURSES AS RANKED
BY THE VARIOUS COMMUNITY COLLEGES

Skill	1	2	3	4	5	6	Average Ranking
1. Rate	1	2	2	1	4	1	4
2. Comprehension	6	4	1	1	1	0	2
3. Vocabulary and word attack skills	0	4	5	3	1	1	3.3
4. Flexibility	4	4	2	1	2	0	2.5
5. Study skills	2	0	1	2	6	1	4.1
6. Other	1	0	1	3	0	0	-

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approach to reading situations was the primary and
only goal while the other respondent who addressed
himself to this placed study skills as the most
important objective of the higher level reading course
and put flexibility in approach to reading situations
as the next most important objective.

Only one respondent indicated any emphasis on
content area reading skills in their reading program.
In this program, content area reading skills was fourth
in importance. There was no mention of content area
reading skills in the objectives of the other respondents
from the various community colleges in New Jersey.

The results may be found tabulated in Table 2.

Question 3: Selection of students for the reading
program

In response to the question of how participants
are selected for the reading program, all of the
respondents indicated that students could be referred
by professors or self-referred to the reading program.

For nine of thirteen respondents answering the
question, the developmental reading course was a
required part of the curriculum for students identified
as low achievers with credit given for the course.
Four respondents indicated that the course was not
required, nor was credit given.

Question 4:   Pre- and post-testing procedures

All of the New Jersey community college reading
instructors participating in the survey indicated that
pre- and post-tests were given to students in the read-
ing program.

Nine of the thirteen responded that they used
more than one pre-test and post-test while the other
four respondents indicated that they relied on one
pre-test and one post-test for their results for
diagnosis and evaluation. Only two of the respondents
stated that they used in-house testing materials and
procedures for pre- and post-testing diagnosis and
evaluation.

The tests used were standardized tests for the
most part. The most popular tests were in order of
frequency of usage as follows: the Nelson-Denny Reading
Test and the California Reading Test (grades 9-14)
received the highest usage and the Davis Reading Test
received the next most. Other reading tests used were:
the Test for Adult Basic Education; the Diagnostic Read-
ing Test; the Minnesota Reading Test; the Gates-
MacGinitie Reading Test Form F; the McGraw-Hill Reading
Tests; and the California Achievement Test. One program
gave its own tests.. Essentially there were as many
tests used as there were respondents.

Question 5:   Length of program

The responses for most questionnaires were incompletely filled out for the question regarding the length of the program.

Various institutions offered different reading courses according to the needs of the students. At the two community colleges offering low level and high level reading courses, the instructors indicated that the reading courses varied in length and time duration partially as a function of their objectives. The low level courses tended to be longer, 45 and 30 hours respectively, while the high level courses tended to be shorter, 30 and 20 hours respectively. The same tendency could be seen between the developmental reading courses and the speed reading courses: the developmental courses tended to be longer while the speed reading courses tended to be shorter.

The median course length was 37 hours, usually meeting three hours per week. The range was from one to two hours per day; from two to five hours per week; and from six to forty-five hours per course. One course in a particular program was primarily laboratory oriented. There were no restrictions or time limits on how much or how little a student would use the laboratory; also, there was very little supervision in this instance as indicated by the numbers of students enrolled in

that particular course (85+), the number of instructors
and assistants (4), and the number of courses (4) within
the program. The course was described as being
individualized--individualized in that the students in
the course worked on their own with practically no
supervision. As may be expected, there was no credit
given for this course.

Question 6: How time is spent

Twelve of the thirteen respondents completed or
partially completed this part of the survey. The median
responses to the question of what percentage of time was
spent in lecture, reading exercises, machine work, or
other activities were the following: lecturing accounted
for 23 per cent of course time; reading exercises took
approximately 48 per cent; machine work occupied 12 per
cent of class time; and other activities utilized 4 per
cent, leaving 13 per cent of unaccounted for class time.
The 13 per cent may be due, in part, to incomplete
reporting and to poor approximations of how class time
was spent. The "other activities" which were specified
included working on skills in an individualized
laboratory situation; reacting to class reports, and
study time.

Six respondents reported zero per cent of class
time devoted to machine work while only three

respondents indicated that they did not use mechanical devices.

There did appear to be differences in the break down of how time is spent in the classroom between speed reading courses and developmental reading courses. The percentages were approximately the same for the time spent in reading exercises while speed reading courses tended to devote more time to using mechanical devices and less time in lecture than developmental reading courses. Table 3 summarizes the findings of the present study compared with previous surveys.

Question 7: Group size

There was a wide variation reported in minimum and maximum class size as reported by the thirteen community colleges in New Jersey. The minimum average class size was thirteen and the maximum average class size was thirty-two. The maximum average class size was a bit inflated due to a reported laboratory class of 85+ students. Six of the thirteen respondents minimum-maximum class size range fell within the average minimum-maximum class size range. Of the other seven, five had either a minimum or maximum number within the average range.

The smallest class size reported had a total of three students, the largest a total of 85+ students.

TABLE 3

COMPARISON OF VARIOUS SURVEYS OF HOW
TIME IS SPENT IN A READING COURSE

Activity	Class time (per cent)		
	Kahn 1977 community college	Geerlofs 1966 college	Colvin 1962 college "idea
Lecture	23	13½	25*
Workbook exercise	48	43½	60
Machine activities	12	21	10
Other	4	11	--
Summarizing and recording results	--	--	5
Unaccounted for	13	11	--

*Colvin's category of lecture included setting goals.

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Question 8: Orientation of program

Twelve of the thirteen respondents answered
this question. None indicated that the course was
machine-oriented; six reported that their course was
book-oriented; four favored the eclectic orientation;
one called itself lecture oriented; and one indicated
that it was individualized and oriented to the indi-
vidual needs of each student..

Interestingly, five of the six book oriented
courses listed comprehension as their primary goal for
their reading course; three of the four eclectically
oriented classes and the one individualized class
reported flexibility in approach to reading as their
primary goal.

Question 9: Materials used

Twelve of the thirteen respondents indicated
that a workbook(s) with timed exercises were used in
their courses. Nine of the thirteen indicated that
mechanical devices were used in their courses: three
reported that they did not use mechanical devices while
one did not answer the question. Ore respondent explained
that neither workbooks with timed exercises nor that
mechanical devices were used but that the reading .
course was a specialized three week program developed
by Achieving Greater Potential, Inc., which included

specialized materials from the program.

Most respondents only gave a sampling of the
workbooks used in their courses. The majority of
respondents reported the use of a large number of work-
books, teacher-made materials, mechanical devices, and
individualized procedures. Ten different workbooks
were reported--no respondents reported using the same
workbook. A complete listing of the workbooks used
may be found in Appendix C.

Of the mechanical devices used, the controlled
reader and tachistoscope were the most popular, usually
used within the context of the same course. Also
mentioned were reading films, teacher-made audio-visual
aids, and specialized devices from AGP, Inc.

Question 10: Fees.

All thirteen respondents reported that a fee was
charged for the course. Regular tuition charges were
assessed at three community colleges while prices
ranged from $34 per 45 hour course to $60 per 45 hour
course at seven other community colleges. One community
college charged $54 for a three week 6 hour reading
course. Another assessed a $50 charge for a 30 hour
developmental reading course.

The average charge per hour of reading instruc-
tion was about $1. The range spanned $.75 per hour to

$9 per hour. The reading course which assessed a
charge of $9 per instructional hour or $54 for a three
week 6 hour course has since merged into a more general
laboratory course dealing with all content areas.

Question 11: Homework

Eleven respondents reported assigning regular
quantities of homework--two did not give homework
assignments. Interestingly, the t   spondents who
do not assign homework do not require the reading pro-
gram of their students or give credit for participation
in the reading program.

The median expected time for the homework to
require was 3½ hours per week. There was considerable
variation ranging from 1 hour per week to 7 hours per
week.

Question 12: Department responsible for reading program

Five respondents indicated that the reading
improvement courses at their community colleges were
under the guidance of the English department; four,
of the Reading department; two, of the Humanities
department; one, of the Education department, of the
Developmental Studies department, of the Academic
Skills department, and of the Collegiate Foundations
department. One respondent reported that one reading
course was offered in the English department and

another reading course in the Academic Skills depart-
ment. There was no explanation given as to possible
differences between the two courses.

Question 13: Number of instructors

The number of instructors and their qualifi-
cations varied considerably from institution to insti-
tution surveyed. There was a median of three instructors
per community college. The range was from 1 to 10 per
college. There was no data given about the course load
of each instructor. The number seems rather high
probably due to the reporting of teaching assistants
and part-time staff without differentiating between
them on the survey.

Question 14: Background of instructor

The backgrounds of the various teachers spanned
a number of academic disciplines and academic degrees
but was restricted to the field of education. There
was one instructor with an Ed.D., thirteen with M.Ed.'s,
five with B.A.'s in education, and ten with at least
B.A.'s in education.

The instructor who had achieved an Ed.D.
received his training in Reading and Educational
Psychology. He ran his department with three full-time
student teaching assistants.

Of the thirteen with M.Ed. degrees, six were trained in Reading, two in English, two in Special Education, and three in related educational disciplines. Of the five with B.A. degrees in Education, three received their degrees in English, one in Special Education, and one in a related educational discipline.

Of the instructors who reported their educational backgrounds those who were trained in Reading, English, and Special Education, respectively, were the most common in the community colleges surveyed.

Question 15: Drop-out rate

The median estimated drop-out rate was 13 per cent. It ranged from an estimated low of 2 per cent to a high of 25 per cent. All four respondents who indicated that the reading courses were not required for their students, that is, the students attended voluntarily through the referral of a professor or self-referral, had a drop-out rate of no higher than 10 per cent with a median of 6 per cent and a low of 2 per cent. The nine respondents who reported that the course was required for certain students not meeting specific requirements had a drop-out rate of no higher than 25 per cent with a median of 17 per cent and a low of 5 per cent

Question 16:   Course evaluation

Seven of the thirteen respondents indicated that
a formal evaluation procedure of the course by the stu-
dents, by the instructor(s), and by others, most notably,
college administrators, regularly took place.   Three of
the thirteen had evaluations by both students and
instructors, while three others reported that there
were no evaluation procedure for the courses at their
community colleges.

Summary of Findings of Survey

There are developmental reading programs in
nearly all of the community colleges in New Jersey.
Only one of the twenty-three institutions surveyed in
New Jersey did not offer any reading program to their
students.   Detailed responses to the questionnaire were
given by fifteen of the twenty-three community colleges.
The other eight answered various questions over the
telephone.   The type of course and the background of
the instructor varied considerably in the various insti-
tutions.

The most typical reading course in the surveyed
community colleges of New Jersey would focus on com-
prehension as the primary goal of the course with
flexibility in approach to reading situations and
vocabulary and work attack skills, respectively, as

secondary and tertiary goals. The developmental reading course would be a required part of the curriculum with credit being given for the course. Standardized pre- and post-tests would be given, either the Nelson-Denny Reading Test or the California Reading Test, in order to diagnose the needs of the students upon entrance to the course and to evaluate the progress of the student after having received the course. Three class hours with a possible extra one hour laboratory and about 3½ hours of homework a week for about fifteen weeks of 45 hours would be the duration of this course. Twenty-three per cent of the class time would be spent in lecture; 48 per cent in reading exercises; 12 per cent in machine-oriented activities; 4 per cent in other activities; and 13 per cent is unaccounted for. The average group size would range from thirteen to thirty-two with an instructor with a Reading or English educational background.

Beyond a nucleus of techniques, the instructors would tend to run a book-oriented class, using a variety of work books and possibly the textbooks of other courses. The controlled reader and the tachistoscope would be utilized during the course. The course would be run by either the Reading or English Departments and have a rather low drop-out rate of 13 per cent. The evaluation procedure of the course would involve the

students, instructors, and, most probably, the college
administrators.

Courses tended not to be individualized even
though a large portion of the work was done fairly
independently. The developmental reading courses
tended to be longer than the speed reading courses,
and the low level reading courses tended to be longer
than the high level reading courses.

Discussion

There was considerable variation in the develop-
mental reading courses offered at the various community
colleges surveyed in New Jersey. Nonetheless, the
variation seemed to be more superficial than substantial
in character.

In this section, a comparison will be made
between current practices in reading programs of the
New Jersey community colleges as indicated in the
survey results and the recommended practices found in
the literature. A review of the literature indicated
that there were no definite procedures or objectives
for community college programs that have been tested
and evaluated through research. In fact, there was
very little literature or research specific to community
college reading programs. For this reason, some of the
comparisons will be made to the body of literature

comprising college and adult reading even though there
may exist distinct differences between community college
reading programs and college and adult reading programs.
This should be kep· in mind when reviewing this section.
Also, because of the considerable variation in the
surveyed practices and the vast differences found in the
literature, the writer had to interpret and evaluate some
of the reported facts and opinions in the discussion.
Thus this discussion will not be completely factual but
rather will include many of the biases of the writer.

The areas covered in the following discussion
will not be a question by question analysis of the
survey. Some of the questions will be included together
into one section if they seem to fit together while
other questions may not be discussed if there is very
little in the literature to compare with.

Program, Objectives, and Diagnostic Procedure

This section deals with questions 1, 2, and 4.
A junior/ community college reading program is inclined
to have the remedial student, the person with
deficiencies in basic reading skills, such as, phonics,
word attack, word recognition, spelling, and other
rudimentary skills (Kerstiens, 1971) in its population
of students. The average community college student
scores at the thirtieth percentile on a national
standardized test (The Two Year College and Its

Students, 1969). Community colleges consistently report that their average student falls well below national norms on standardized reading comprehension and vocabulary tests (O'Banion, 1969). -

There was no differentiation on the survey among developmental reading courses, remedial reading courses, or speed reading courses. The question was phrased, "Do you offer developmental reading courses for: A. College students; B. Business executives?" Three respondents indicated that they offered speed reading courses for business executives, but there were no respondents who differentiated between remedial courses and developmental reading courses for college students.

This may have been due to a number of factors. The concept of what a developmental reading course is may have included remediation of basic needs. An examination of the objectives of the reading programs does not indicate this. The higher level skills of comprehension and flexibility in approach to reading situations predominate as the focal points or primary goals of the majority of community colleges surveyed. Vocabulary and work attack skills were unfortunately grouped together on the questionnaire. It is unfortunate because vocabulary development and word attack skills receive very different emphasis.

Vocabulary development can be more specialized to specific content areas and is more part of a developmental reading program while word attack skills are the rudimentary skills that frequently comprise the core of remedial reading programs. However, they were not ranked as a primary goal for any of the courses surveyed.

One of the most apparent and accepted trends in reading research and practice for college and adult reading as reported in the literature has been a broadening of the concept of reading from a mechanistic interpretation of eye movements to placing greater emphasis on individual variation, the higher level reading skills, and especially content area reading. This broadening has pervaded the entire field of college and adult reading. It seems also to have enveloped the more recent field of community college reading (Darnes et al., 1971) even though the academic proficiency of the student population of community college is very different from students in colleges and universities (O'Banion, 1969).

According to the review of college reading in Chapter II of this paper, the tendency is for reading programs' objectives to emphasize reading comprehension, flexibility, and content area reading. The results of the survey of New Jersey community colleges tends to

reflect this trend: program objectives focus on com-
prehension and flexibility in approach to reading
situations. However, this tendency reflects a very
real dilemma: there seems to be a gap between the
remedial needs of the typical community college student
and the reported program objectives of the New Jersey
community colleges surveyed. The program objectives
of the community colleges seem appropriate in terms of
the literature on college reading. However, on closer
examination, despite the broadening of the concept of
reading, many researchers and practitioners emphasize
the need to individualize the course objectives to meet
the needs of the students (Maxwell, 1963, 1972, &
Brethower, 1968, and many others). This, in turn,
requires appropriate diagnostic procedures (Evans &
Dubois, 1972) in order to be able to differentiate
between the types of students who will be taking the
reading course. However, from the questionnaire, it
appeared that the focus of most of the courses is
generally upon a pre-selected group of skills and materials,
usually general comprehension, that proceed through a
prescribed skill sequence. This kind of developmental
approach, when remediation is required, does not
necessarily ameliorate the cause(s) for that level of
performance. Evans and Dubois (1972) argued that direct
instruction to correct inadequate or incorrect learnings

is an essential aspect of the remedial teaching process
required with junior/community college students. They
emphasize that "instruction must be directed toward
those specific disabilities which caused a particular
grade level performance," (p. 42) not towards the
mastery of prerequisite skills for assigned levels.

Thus on a superficial level there seems to be
agreement between the goals of the community college
reading programs surveyed and the recommendations from
the literature, but on closer scrutiny there is little
in the way of agreement. The literature suggests the
importance of appropriate diagnosis to meet individual
needs, especially for the student population in
junior/community colleges who tend to require more
remedial attention. Fairbanks and Snozek (1973) found
that 40 per cent of the two-year colleges considered
individualization to be the strongest aspect of their
program. In this survey, none of the institutions indi-
cated that they ran individualized programs. One
respondent reported that one of the goals of the reading
course at the community college where he taught was to
overcome common problems.

The diagnostic procedures reported by the
respondents are a good indication of the lack of indi-
vidualization in their reading courses. Only one
respondent reported using in-house tests along with

standardized tests in their pre- and post-testing pro-
cedures. All of the other respondents reported giving
standardized reading tests which are not diagnostic
tests but rather survey reading tests. The tests used
do not provide information about why a student reads
poorly or what his deficiencies are (without a detailed
item analysis); rather they give grade levels or per-
centile scores. "This is a most important consideration
if a remediation program is to be successfully planned"
(Evans & Dubois, 1972, p. 42). In a survey, Goodwin
(1971) found the same disregard of appropriate diagnostic
efforts: 60 per cent of the 300 junior college reading
teachers surveyed considered the standardized reading
test given at the beginning of the course as diagnostic.

In conclusion, it appears that the goals and
objectives of the community college reading programs of
New Jersey need to be reevaluated in terms of the indi-
vidual students in the courses. This can only be done
through appropriate diagnostic procedures, which requires
more than the administration of standardized survey
reading tests at the beginning of each course. It also
should involve some of the myriad of procedures outlined
in the literature review of this paper.

Recommendations for improving the questions 1,
2, and 4 of this questionnaire would include the follow-
ing in order to receive more detailed data:

1. Asking the respondents of the institutions if remedial, developmental, and/or speed reading courses were offered;

2. Separating vocabulary and work attack skills into two separate categories in the list of objectives in question 2 and including overcoming individual deficiencies as another objective;

3. Asking what is the entire diagnostic procedure used for each individual student;

4. Perhaps a detailed interview on all of the above would give a more detailed picture.

Some of the other questions pertaining to this section which need more research and were raised by this study are the following:

1. Should objectives of community college reading programs concentrate on basic remedial needs, on skills needed in specific content areas, or on flexibility in approach to reading situations? Should there be different courses with different objectives?

2. Are there any appropriate diagnostic instruments developed specifically for the community college population?

Referral Process and Drop-Out Rate

This section deals with questions 3 and 15. Literature reports give contradictory assessments of

the situation. A number of researchers and practitioners maintain that the weakest aspect of their reading program has to do with it being voluntary and receiving no college credit for taking the course while others emphasize that the voluntary aspect of their programs means that the students who enter tend to have higher motivation and remain longer in the course. In deciding whether or not the reading courses are voluntary and are assigned credits some consideration should be given to the objectives of the institution, the goals of the reading program and the course itself, and the attitudes of the faculty and student body.

In this survey nine of the thirteen respondents reported that the developmental reading course was required for low achievers and credit was given for the course. This is a much higher percentage of institutions which require a reading program of low achievers than found in other surveys (Geerlofs & Kling, 1968, Fairbanks & Snozek, 1973) and may be explained by the fact that this has been the only survey reporting this data solely about community colleges.

Interestingly enough, all four respondents who indicated that the reading courses were entirely volutnary had a lower median drop-out rate (6 per cent) than the nine respondents who reported that the course was required for certain students and could be elected

by the other student population (17 per cent). This tends to support the contention that a voluntary reading program tends to have more motivated students than a required reading program as determined by the drop-out rate. However, the average reported drop-out rate for both types of reading courses is surprisingly low. It may be worth providing academic supports for more less motivated students than for less more motivated students.

Evans and Dubois (1972) report that there are no hard facts about the drop-out rate in reading/study skills courses at the junior/community college level but the drop-out estimates range from 74 per cent to 95 per cent from what they consider to be reputable sources. The drop-out rate compiled by this survey is considerably lower (a median of 13 per cent) than those estimates.

In conclusion, the type of referral process should depend theoretically on the nature of the institution where the program is being offered. The drop-out rate seems to be affected by the type of referral process: It makes good sense that at a community college the reading program is a required part of the curriculum for students who demonstrate low abilities to read as measured by standardized testing procedures.

Tests

This section deals with question 4. There are
no adequate standardized tests available specifically
for the community college population (Kerstiens, 1971,
Seibel, 1966). It is one of the areas of testing that
has been most neglected (Seibel, 1966). The community
college serves a heterogeneous reading population and
should have tests which measure a wider range of reading
skills than are now available (Kurak, 1967). The
average community college student consistently scores
well below national norms on standardized reading com-
prehension and vocabulary tests (O'Banion, 1969).

Of the nine tests mentioned by the respondents
of the survey, two appear to be superior to the others
for college level reading measurement as reported in the
Mental Measurement Yearbook (1965). Of these two the
Nelson-Denny Reading Test was mentioned by the greatest
number of respondents (3). The other was the Davis
Reading Test which was used by one respondent. The
other tests showed greater weaknesses in reliability
data, had little proof of validity, had no college level
norms, poor interpretive data, and/or the test might be
too easy for most college students (Buros, 1965).

In conclusion, there are no appropriate reading
tests for community college populations. Of tests used
by respondents, the Nelson-Denny Reading Test and the

Davis Reading Test were the best available for college
level reading. The majority of respondents were using
tests which were not as accurate for college level
reading as others on the market.

Course Emphasis

This section deals with questions 6, 8, and 9.
Seven of the thirteen respondents considered their
courses to be book-oriented as opposed to machine-
oriented or other oriented. Twelve of the thirteen
indicated use of at least one workbook in their courses.
Most respondents only gave a sampling of the workbooks
used in their courses, some indicated that a large
number was used. A result consistent with these findings
of the survey was that an average of 48 per cent of
course time was spent doing reading exercises, presumably
in workbooks.

Very few literature reviews addressed themselves
specifically to this area. Colvin (1962) recommended
in his ideal college reading program that about 60 per
cent of class time be devoted to practice on selected
exercises and textbook materials. Colvin and others
pointed to a need to use content area textbooks in the
reading course, a practice utilized in only one of the
community colleges surveyed.

Comparing the results from the question of how class time is spent of this survey with that of Geerlofs' college survey (1966) and Colvin's ideal college reading program (1962) is interesting. See Table 3.

In Kahn's survey more class time is devoted to lecture (23 per cent) than in Geerlofs' (13½ per cent) while less time is spent in activities with machines (12 to 21 per cent). In Kahn's survey the results seem to indicate less machine usage but more lecture time. Both the time spent on mechanical devices and on reading exercises is fairly consistent for Kahn's results and Colvin's ideal even though the reading exercises in Kahn's survey focused in workbooks while Colvin recommended using content area textbooks. The greatest departure can be seen in the 23 per cent of class time devoted to lectures in the New Jersey community colleges surveyed by Kahn while Colvin felt that 25 per cent of class time should be spent establishing individual goals and discussing common problems. This is due to Colvin's conception of the ideal college reading program as being individualized. However, the community colleges surveyed by Kahn, while paying lipservice to individualization, did not utilize adequate diagnostic procedures in order to be able to identify the individual needs of their students, spent the greatest protion of their

class time on workbook exercises which, the writer presumes, were done as a class because of the described circumstances, and concentrated on comprehension and reading flexibility skills when it may have been more appropriate to work on the more basic word attack skills.

In conclusion, the thirteen community colleges who responded to this survey tended to have book-oriented reading programs which were not very individualized. Materials seemed to focus mainly on workbooks despite literature recommendations to use content area textbooks. The vast majority of time was spent doing workbook exercises (48 per cent) and listening to lecture (23 per cent) despite literature recommendations to individualize goals and programs.

Educational Background and Department Responsible for Reading Program

This sections deals with questions 12 and 14. One of the literature reports which addresses itself to the educational background of college instructors in more than a perfunctory manner is by Lowe (1963). He noted that instructors with a reading background or a thorough knowledge of the reading process tended to be more flexible in their approach to teaching reading than instructors who did not have this background.

In this survey, eleven of twenty-nine instructors had specialized in reading at either the Bachelor or Master's level. Eighteen of the twenty-nine had either educational backgrounds in Reading or English. Interestingly, this may have been a result of the department which was responsible for having the reading programs. Eleven of the fifteen departments were either English (5) or Reading (4) or Humanities (2). The results of the survey tend to indicate that most reading instructors have English or Reading academic backgrounds. The results have been tabulated in Table 4.

In conclusion, the educational backgrounds of the majority of reading instructors at the surveyed community colleges is either English or Reading. The literature recommends that instructors have a working knowledge of the reading process in order for them to be more flexible in their teaching. The predominance of reading/study skills programs under the guise of Reading and English departments tends to indicate that the instructors have this working knowledge of the reading process. However, there are a number of reading instructors in community colleges of New Jersey who have educational backgrounds in other fields of expertise than reading and may have to depend solely on their experience and intuition in order to develop

TABLE 4

BACKGROUND OF READING INSTRUCTOR AND DEPARTMENT OF READING PROGRAM

Subject	Department Housed	No degree Specified	B.A.	M.Ed.	Ed.D.
English	5	2	3	2	-
Reading	4	5	-	6	-
Special Education	-	1	1	2	-
Educational Psychology	-	-	-	-	1
Political Science	-	1	1	-	-
Social Studies	-	1	-	-	-
Adult Education	-	-	-	1	-
Math/Science & Reading	-	-	-	1	-
Elementary Education	-	1	-	-	-
Humanities	2	-	-	-	-
Collegiate Foundations	1	-	-	-	-
Education	1	-	-	-	-
Developmental Studies	1	-	-	-	-
Academic Skills	1	-	-	-	-

and organize a reading program.

Evaluation of Course

This section focuses on question 16. The evaluation of a course and program is essential for good teaching. The more levels of evaluation that take place the more avenues for improvement that open theoretically. It should be an assumed part of every reading course and program at every level of teaching.

Over half of the respondents indicated that there were course evaluations by students, instructors, and college administrators while three reported that there were no evaluation procedures used in their courses. Of the three instructors who reported this lack, two did not receive their academic training in either Reading or English while the third respondent did not specify his educational background.

In conclusion, the majority of New Jersey community college respondents utilize proper evaluation procedures but there are some who need to begin evaluating their reading programs.

Course Characteristics

The findings of questions 5, 7, 10, 11, and 13 were reported. They are not the type of questions that can be compared to recommendations from the literature because they are specific to the nature

of each community college, the faculty and students,
the objectives of the program, and other such con-
siderations.

CHAPTER V

SUMMARY AND CONCLUSIONS

The concept of college reading instruction has
been gradually shifting from a perspective that
emphasized remediation of skills that were deficient
to a perspective that emphasizes the need for develop-
mental reading programs in order for the continued
growth of one's reading ability throughout college and
adult life. Objectives of reading programs have
switched from highlighting the mechanistic processes
of eye movements to remediating basic deficient skills
and then to focusing on comprehension, flexibility,
an content area reading. In academic communities
where the average student scores approximately 30
percentile points below the normal standard population,
this latest shift away from remediation of basic skills
may be inappropriate. The community college is such
an academic community.

This investigation involved a survey of the
extent community colleges of New Jersey in order to
compile information relevant to the following questions:

1. What are the objectives for reading pro-
grams for New Jersey community colleges?

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2. What are the most common materials and
   methods and technological equipment used
   to meet the specified objectives?

3. What is the relationship between literature
   research findings and specified objectives
   and materials?

4. What are the qualifications of instructions?
   Do they meet the standards recommended in
   the literature?

5. What evaluation procedures are used to
   improve the course presentation and contents?

Summary

The summary will be limited to a consideration
of the previously stated five questions, question by
question.

Question 1: The objectives of the reading pro-
grams of the surveyed community colleges of New Jersey
were ranked. Average ranking were the following:
comprehension; flexibility in approach to reading
situations; vocabulary and work attack skills; rate;
and study skills.

Question 2: The majority of respondents
reported the use of a large number of workbooks and
various mechanical devices, especially the controlled
reader and the tachistoscope.

Question 3: The tendency of the reading courses of New Jersey community colleges to focus on comprehension and flexibility presents a very real dilemma: there seems to be a gap between the remedial needs of the typical community college student as reported in the literature and the reported program objectives of the reading programs of the New Jersey community colleges that were surveyed. Researchers and practitioners emphasize the importance of individualizing the course objectives to meet the needs of the students. In order to be able adequately to individualize and plan reading programs detailed diagnostic procedures must be followed. However, it appeared from the results of the questionnaire that the focus of most of the courses is generally upon a pre-selected group of skills and materials, usually comprehension, that proceed through a prescribed skill sequence.

Question 4: There was one instructor with an Ed.D., thirteen with M.Ed.'s, five with B.A.'s in education, and ten with at least B.A.'s in education.

Of the instructors who reported their educational backgrounds those who were trained in Reading, English, and Special Education, respectively, were the most common in the community colleges surveyed. The instructors of the reading courses in the New Jersey community colleges that were surveyed, for the most

part, seemed highly qualified.

Question 5: Seven of the thirteen respondents
indicated that a formal evaluation procedure of the
course by the students, by the instructors, and by
others, most notably, college administrators, regularly
took place. Three of the thirteen had evaluations by
both students and instructors, while three others
reported that there were NO evaluation procedure for
the reading courses at their community colleges.

Conclusions

It appears that the goals and objectives of the
community college reading programs of New Jersey need
to be re-evaluated in terms of the individual students
in the course as recommended by the literature review.
Well-developed individualized programs can only be
accomplished through the application of appropriate
and thorough diagnostic procedures. This requires more
than the administration of standardized survey reading
tests at the beginning of each course, a practice
common to the majority of the community colleges of
New Jersey. Thus there is a gap between what the read-
ing programs of the surveyed community colleges of New
Jersey set as goals and what the literature-research
recommends.

The evaluation procedures of the majority of reading programs seems adequate. Ten of thirteen utilize both student and instructor(s) course evaluations, while six of those ten also have an outside party evaluate the course. However, three reading programs have <u>NO</u> evaluation procedure of the courses. This is inexcusable and should never happen. Of the three instructors who reported this lack, two did not have educational backgrounds in either Reading or English while the third respondent did not specify his field of academic training. This indicates a real need for reading instructors to have a thorough training in both diagnostic and evaluation procedures and to understand their importance in teaching reading.

Suggestions for Further Research

The questionnaire used in this survey could be further refined in the following way to give a better idea of the functioning of community colleges:

1. Asking the respondents of the institutions if remedial, developmental, and/or speed reading courses were offered;

2. Separating vocabulary and work attack skills into two separate categories in the list of objectives in question 2 and including overcoming individual deficiencies

as another objective; and

3. Asking what is the entire diagnostic pro-
cedure used for each individual student.

Some questions which need further research are
the following:

1. Should objectives of community college read-
ing programs concentrate on basic remedial
needs; on skills needed in specific content
areas; on flexibility in approach to reading
situations; should there be different courses
with different objectives, should only certain
students be considered for the courses, i.e.,
students with an arbitrarily set IQ level
or above?

2. Are there any good diagnostic instruments
developed specifically for the community
college population?

Some further areas which need development are:

1. Testing, and

2. Materials.

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APPENDIX A

SURVEY OF READING COURSES IN NEW JERSEY
COMMUNITY COLLEGES

1. Do you offer developmental reading courses for:
    A. College students   Yes ___ No ___
    B. Business Executives   Yes ___ No ___

2. Is the objective of the course to improve: (Rank
    A to F in order of importance given to each factor)
    A. Rate   _____
    B. Comprehension   _____
    C. Vocabulary and word attack skills   _____
    D. Flexibility in approach to
        reading situations   _____
    E. Study skills   _____
    F. Other (please specify)   _____

3. How are participants selected?
    A. Required course   Yes ___ No ___
        If yes, is credit given?   Yes ___ No ___
    B. Referral of professor   Yes ___ No ___
    C. Self-referred   Yes ___ No ___

4. Are pre-tests and post-tests used?   Yes ___ No ___
    If yes, name of test   _____

5. What is the length of the program?
    A. Hours per day   _____
    B. Hours per week   _____
    C. Hours per course   _____

6. How is time spent? Please give
    percentages.
    A. Lecture   _____
    B. Reading Exercises   _____
    C. Machine   _____
    D. Other, please specify   _____

7. What is group size?

                             minimum   maximum

154

8. Is the program
    A. Machine oriented?   Yes____ No____
    B. Book oriented?   Yes____ No____
    C. Other (please specify)   _____

9. What materials are used?
    A. Workbook with time exercise   Yes____ No____
        Please give name and author
        of book _____
    B. Mechanical devices (i.e.,
        Tachistoscope, EDL Controlled
        Reader, etc.)   Yes____ No____
        Please name _____

10. What fee does the student pay
    for the course?   ____ ____ ____

11. Is homework assigned?   Yes____ No____
    If yes, how many hours?   _____

12. What department is the Reading
    Course in?
    A. Reading development   Yes____ No____
    B. English   Yes____ No____
    C. Other, please specify   _____

13. How many instructors teach
    reading courses?   _____

14. In what specialities do the various
    instructors have their degrees?   _____
                                                        _____
                                                        _____
                                                        _____

15. What percentage of students
    initially enrolled finish the
    course?   _____

16. Is there an evaluation of the
    course?   Yes____ No____
    A. If yes, by students   Yes____ No____
                by instructors   Yes____ No____
                other, please specify   _____

APPENDIX B

LETTER

I am conducting a survey of reading courses in the various Community Colleges of NJ. The results of the survey will be the data base for my Master Thesis in Education at Rutgers University.

I will mail the results of the survey to you when I have compiled the information.

Please complete the survey and return it to me as soon as possible.

Thank you.

Sincerely,

Edward Kahn

APPENDIX C

LIST OF VARIOUS WORKBOOKS REPORTED IN THE SURVEY

Brown. Efficient Reading.

_____. Reading Power.

_____. Skills in Reading.

Cahill. The Urban Reader.

Cooper. Toward Better Reading Skill.

Gedamke and Krupp. Reading as Thinking.

McCall-Crabbs. Reading for Meaning.

Norman. Successful Readings: Key to Our
Dynamic Society.

Sack and Yourman. 100 Passages.

SRA Reading Laboratory:

157.

APPENDIX D

COMMUNITY COLLEGES WHO RECEIVED SURVEY

*Assumption College for Sisters
Mendham, New Jersey 07945

*Atlantic Community College
Black Horse Pike
Mays Landing, New Jersey 08330

*Bergen Community College
400 Paramus Road
Paramus, New Jersey 07652

Brookdale Community College
765 Newman Springs Road
Lincroft, New Jersey 07738

*Burlington County College
Pemberton, New Jersey 08068

*Camden County College
Blackwood, New Jersey 08012

Centenary College for Women
Hackettstown, New Jersey 07840

County College of Morris
Rt. 10 & Center Grove Road
Dover, New Jersey 07801

*Cumberland County College
Sherman Avenue
Vineland, New Jersey 08360

*St. Peters College
Hudson Terrace
Englewood Cliffs, New Jersey 07632

Essex County College
31 Clinton Street
Newark, New Jersey 07102

Edward Williams College
150 Kc: _e lace
Hackensack, New Jersey 07601

*Felician College
Lodi, New Jersey 07644

Gloucester County College
Salina and Tanyard Roads
Sewell, New Jersey 08080

*Mercer County Community College
1200 Old Trenton Road
Trenton, New Jersey 08690

*Middlesex Community College
Edison, New Jersey 08817

Monmouth College
West Long Branch, New Jersey

Ocean County College
Hooper Avenue
Toms River, New Jersey 08753

Passaic County Community College
170 Paterson Street
Paterson, New Jersey 07505

Rider College
Lawrenceville, New Jersey 08602

*Salem Community College
Penns Grove, New Jersey 08069

*Somerset County College
Somerville, New Jersey 08876

Union College
1033 Springfield Avenue
Cranford, New Jersey 07016

*Indicates that survey was returned from school.