THE ENIGMA OF READING COMPREHENSION

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Abstract

Reading is a dynamic and multifaceted process and comprehension of print is an outcome of an interaction between reader variables such as background knowledge, proficiency level, cognitive ability, motivation and purpose, and text variables such as sentence structure, vocabulary intensity, and the difficulty and novelty of the subject-matter. This paper, which falls into four parts, attempts to highlight the relative importance of these variables. In the first part, three major models of reading are discussed and contrasted: the bottom-up or text-based model, the con-structivist or reader-based model, and the inter-active or transactional model. In the second part, a number of empirical studies are reviewed which shed light on the nature of the reading process and instructional techniques. The studies deal with such topics as: the role of inference, context, prior knowledge, proper use of comprehension questions, and student questioning. The third section touches on what research in ESL reading has to offer the teacher. The point is made that ESL reading is different from L1 reading and a

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major difference is cultural in nature. The fourth and last section pulls together a number of implications and suggests some alternatives which might prove helpful to the ESL reading teacher.

INTRODUCTION

Reading is a complex and dynamic process — complex because it involves innumerable factors including vision, memory, cognition, prior knowledge and experience and cultural background; dynamic because it depends on who is reading what for what purpose, at what stage of proficiency and under what psychological circumstances. Whether it procedes from text to the reader's mind, or from the reader's mind to the text, or in both directions, is basically a function of the reader's knowledge of the language and the subject matter. It is clear that as the learner improves his knowledge of the language and the world, he reads better. In other words, the reader uses his visual information (the printed cues) minimally and reconstructs the message of the text on the basis of his theory of the world. Therefore, it would be only logical to say that reading is not an either/or process; rather, it is a function of an interaction (or transaction) between the reader, the text, level of proficiency, as well as psychological and sociological conditions.

This paper will include a) some models of reading and theoretical speculations about reading comprehension; b) a number of experiments related to reading comprehension; c) what research in L1 and L2 has to say in regard to teaching reading comprehension to ESL students; and d) certain implications that the reviewed research might have for the ESL of EFL teachers.

SOME MODELS AND THEORIES

What is reading? Is it decoding letters to sounds or word recognition? Is it reasoning, thinking and problem solving, or processing information? Is it extracting meaning from text or bringing meaning to text? Is it a psycholinguistic guessing game? Or is it all of these and even more?

A wide variety of answers have been attempted by theorists, reading specialists, psychologists, and recently psycholinguists. The definitions range on a continuum between the stimulus-response theory and the cognitive theory. Three major camps with respect to the nature and process of reading are:

a) Those who think that reading is a bottom-up, stimulus-bound, text-based, interpretive process in which the reader has a very minor role to play. According to this view, reading is a verbal response to printed (graphic) stimuli and the act of reading comprises skills and subskills. The reader progresses from letter features, to letters, to letter clusters, to morphemes, to words, and finally to sentences. This definition is linear and seldom concerns itself with discourse chunks bigger than sentences. Bloomfield (1942) and Fries (1963), for example, advocated the symbol-sound view and emphasized that teaching beginners to read should concern itself with helping them to decode the print into sound and from sound into meaning. They regarded written language as a secondary abstraction of speech (which was thought to be the "real" language). This point of view totally neglected semantic and syntactic systems as well as the role of reading as communication and information processing. This camp primarily views reading as an interpretive act, that is, a process of finding the meaning which inheres in the structure of the sentences and is independent of the comprehender (Blachowicz, 1977-1978).

b) Those who believe that reading is a top-down, reader-

bound, knowledge-based, constructive, and dialectic process in which the print or the visual stimuli have a minor role to play and that in the task of reading the reader brings to bear his schemata (cognitive structure), prior knowledge, experience, expectations, and his theory of the world. This is the constructivist view of reading and reading comprehension. Thorndike (1917), Goodman (1970, 1973, 1975, 1977), Smith (1975, 1978) and Page (1979-1980), to name just a few, belong in this camp. An example of this point of view is Thorndike's now classic article which was published as early as 1917. In this article we read: "The mind is assailed as it were by every word in the paragraph. It must select, repress, soften, emphasize, correlate and organize, all under the influence of the right mental set or purpose or demand." (p.431).

Although Thorndike arrived at these conclusions by observing elementary school children, the proficient reader is far from being under the pressure of the printed page (since he selects according to his purpose, schemata, and perspective), yet what Thorndike says seems to be particularly true in the case of ESL students who come to the task of reading with a totally different frame of mind (both linguistically and culturally) and therefore feel the constant pressure of the printed page.

Another advocate of this second (constructivist) point of view is Kenneth Goodman, who contends that reading instruction should not begin with linguistic parts but with whole, complete, and real language. In emphasizing his point, Goodman (1975) states with humor that:

> Language is indivisible: it ain't no salami that you can slice as thin as you want and still have all the pieces look like the whole salami. Language is . . . learned from whole to part, from general to specific. (pp.628-630)

c) Those (especially in the literary camp) who believe that reading is neither totally text-bound nor completely

reader-bound, but somewhere in between. These theorists argue that the reading process has two components – the text and the reader – and comprehension is the outcome of an interaction or transaction between the two. According to this viewpoint, the reader must be willing to be open to the text as much as he wishes to impose himself on the text. These people also strongly contend that a story, for example, does not have a meaning, but meanings and that every reader assembles his own meaning from the open-ended text, depending on his background. Their argument is based on the notion that the whole is more than the sum total of its parts – and this whole is created by the reader. According to them, there is no right or wrong meaning and the use of objective instruments such as multiple choice tests for measuring something as subjective as comprehension seems to be inappropriate. Maxine Greene (1975) has put this literary view succinctly:

> The reader who encounters the work must recreate it in terms of his consciousness. In order to penetrate it, to experience it existentially and empathetically, he must try to place himself within the "interior spaces" of the writer's mind as it is slowly revealed in the course of his work (emphasis in the original). (pp.300-301)

In her discussion of reading models, Williams (1978) aptly concludes: "It may be that different models are appropriate at different stages of reading proficiency" (p.17); or, as Newman (1978-1979) says, these models differ from each other in the differential emphasis they place on the visual versus the cognitive aspects of reading.

As far as reading instruction is concerned, no single model should be adhered to at the expense of the other models since each model answers different pedagogical questions and emphazises different aspects of reading.

EMPIRICAL STUDIES RELATED TO
READING COMPREHENSION

Having discussed certain theoretical issues concerning reading and three contrasting models of reading, this paper now examines some of the empirical research and experiments that have been done regarding reading comprehension. These experiments deal with certain aspects of comprehension such as the phenomenon of inference, the importance of context, the role of schemata in understanding the printed page, and issues related to comprehension questions.

One of the most basic skills that a reader needs to utilize is the ability to make inferences. Making inferences is bridging the gap between two propositions or chunks of discourse in a text which are not explicitly connected by the author. Kintsch (1974), Frederiksen (1975) and others have demonstrated that reading even the simplest prose requires a great deal of inferential processing. Thus, comprehension depends to a great extent not on what is explicitly stated in a passage, but on the inferences of the reader (see Blachowicz, 1977-1978).

There are several factors that are involved in the phenomenon of inference. First, inference takes time. Haviland and Clark (1974) studied the phenomenon that inference even at sentence level takes time and the more implicit the message, the slower the process of reading. They found that, for example, the pair "Ed was given an alligator for his birthday. The alligator was his favorite present." was understood faster than the pair "Ed was given lots of things for his birthday. The alligator was his favorite present." The reason for this is that in the first pair the grammatical subject in sentence 2 has a direct antecedent in sentence 1, while in the seond pair the antecedent of "the alligator" is indirect (i.e., is not mentioned in the context sentence).

Second, inference is a function of context. A study concerning the relationship between inference and context was done by Thorndyke (1976), who investigated the role of inference on larger chunks of connected discourse than sentences. The researcher concludes that when a subject reads a piece of written discourse, he establishes a frame of reference or a context and thus sets up certain expectations which become criteria for the subsequent incoming information. When there is consistency between the two, no problem arises and meaningful reading continues, but when there is inconsistency, backward search begins. This finding is more or less similar to Goodman's (1970) conclusion that what the reader does is to test hypotheses created by his expectations. Even unfamiliar words are better understood and processed in familiar and meaningful contexts (Wittrock, Marks, & Doctorow, 1975). (One can easily see how important well-constructed titles and headings are as a general context or frame of reference for the reader.) Why is it important for the student to develop the ability to make inferences? One of the reasons is that inferred or derived information is retained longer than explicit or reproduced information; also when there is no context or no specific task, the reader seems to process information haphazardly. (Frederiksen, 1975).

Meyer (1975) has looked at the problem of text comprehension from another angle. In her discourse analysis she has postulated that the text consists of superordinate information (which is high in the hierarchy of discourse structure, roughly corresponding to the "main idea") and subordinate information (which is low in the discourse "tree," roughly corresponding to "details"). In an experiment she found that readers tend to retain and recall superordinate information better than subordinate information. If this is true, she argues, then the text writers should place important information high in the content structure in order

to secure better learning and retention.

A very important factor without which comprehension of text cannot take place is relevant prior knowledge (or shcemata). Schemats are a person's abstract and hierarchical knowledge structure which consist of the person's life history — his prior knowledge, experience, beliefs, attitudes, etc. In the act of reading, a reader tries to interpret the text according to what he already knows and, depending on his perspective and purpose, processes the text information differently. Some of the researchers who have done considerable work in this connection are Richard Anderson and his associates. These people's interesting conclusion is that while reading, a person "sees" the message in a certain way and sometimes he does not even consider other alternatives. What their studies imply, pedagogically, is that if there are problems in students' reading comprehension (e.g., slow reading and over-reliance on the text), they are attributable to deficiencies in students' background knowledge rather than to their linguistic skills.

Let us now turn to the ubiquitous problem of comprehension questions — what kind of questions to ask, when to ask them, how often to ask them, and whether measuring comprehension must be carried out by means of objective tests, cloze procedures, or subjective and essay type tests.

With respect to this problem research is inconclusive. Some researchers, however, have come up with certain tentative solutions as to what type of questions should be asked of the reading students. Doake (1974), for example, makes a distinction between literal or explicit questions (beginning with who, what, where, etc.) and reasoning or inferential questions (beginning with why, how, etc.) and as a result of an experiment he concluded that pre and post adjunct questions appear to be a useful strategy for promoting comprehension, but with certain restrictions: post-literal adjunct questions seem to be superior to pre-literal; and

pre-reasoning adjunct questions appear to be superior to post reasoning. The truth of this conclusion may partially lie in the notion that giving the student specific inferential tasks before reading the text activates relevant schemata which in turn make learning meaningful and easy. Of course, both the literal and the inferential type of questions are necessary; however, in order for the student to get engaged in a productive interaction with the text, he should be trained in answering questions in higher cognitive levels which deal with reasoning and problem solving as well as exploring the intention of the writer.

A crucial point which is often neglected in constructing comprehension tests is the fact that in a classroom situation the type of questioning affects the manner in which students process text information. In a study, Marton and Saljo (1976) found that students did adapt their strategies of learning to their conception of what was required of them. In other words, the subjects who expected factual questions mostly attended to explicit details, while those expecting inferential questions attended to higher level of processing text information. The researchers then concluded that expecting an objective test leads to a more superficial level of processing, while expecting an essay or oral test leads to the focussing of attention on "general principles and main points," thus suggesting deeper processing.

Comprehension has generally been measured by teacher questioning, but an extremely important indicator of text comprehension is the type of questions that students ask. Research in student questioning is indeed meagre and warrants serious attention. Miyake and Norman (1979) have touched on this point through empirical research. In a study they tested the notion that a prerequisite for asking questions about new topic matter is some appropriate level of knowledge. To test their hypothesis, they tested learners with two levels of background knowledge using learning material

with two levels of difficulty. The learners were instructed to say aloud their questions and thoughts while learning from printed text. With easier material, beginners asked more questions than the trained learners; with the more difficult material, trained learners asked more questions than novice learners. The results seem to indicate that the students' asking questions is a function of their level of knowledge — when the material is too easy or too difficult, students do not ask questions.

RESEARCH IN ESL READING

Is learning to read in L1 similar to learning to read in L2? There are, certainly, similarities in the sense that reading is a universal act and the reader who is proficient in his native language, once past the preliminary stages of the acquisition of graphophonemic correspondences and mastery of certain subskills in L2, can transfer his L1 reading strategies. The differences, however, seem to overshadow the similarities. The ESL student's problems are twofold — cultural and linguistic.

As discussed earlier, prior knowledge and life history directly affect the comprehension and retention of written discourse. This issue gains tremendous importance especially in the case of the ESL student who finds himself in a new culture and environment. To write a text, the writer draws upon his history and experiences; to decode the message, the reader should do likewise. And if the writer and the reader are of diverse backgrounds, then the gap must be bridged if communication is to take place. Psychological, sociological, and cultural factors, therefore, are the most important determinants of one's education. This is a point that Eskey (1973) and Kaplan (1966), too, have emphasized in their research concerning reading and writing problems of non-native speakers of English. It is apt to quote at this point

Kaplan's (1966) viewpoint, which, in limbo for a decade or so, is now gaining some credibility:

> The teaching of reading and composition to foreign students does differ from the teaching of reading and composition to American students, and cultural differences in the nature of rhetoric supply the key to the difference in teaching approach. (p. 1)

Every language has, according to Kaplan (1966), a rhetoric and logical system of its own and what an ESL student brings to the task of reading English print is an entirely different frame of reference and schemata based on his social and educational background.

Despite the fact that not much empirical research has been done in the area of reading comprehension in ESL and minority situations, there is some evidence which indicates that non-native speakers of English or minority children do have problems in adjusting to the new cultural as well as linguistic environment. Hill (1977), for example, makes the point that minority children's reading comprehension is often a function of their socioeconomic status and past experiences. This point of view is in full agreement with the insights that psycholinguistics has produced; namely, that while reading, the reader plays an active role and that he takes the text to mean what his background dictates him. "Reading," argues Hill (1977), is "not simply. . .a pragmatic activity that human beings engage in so that they may obtain particular bodies of information, but rather. . .an activity that engages the imaginative faculties of the whole person" (p. 52). Labov and Robins (1969), too, have a similar point to make — "that the major problem responsible for reading failure is a cultural conflict" (p. 402).

In her investigations of the effects of the reader's attitudes on responding to prose, McKillop (1951), similarly, emphasizes the point that the reader learns more easily and retains better the material which is in harmony with his attitude

than the material which is contrary to his attitude.

Aside from the cultural and personal conflicts, the ESL student comes to the task of reading with serious linguistic problems. Even students who are well-read and fluent readers in their native language seem to suffer from slow reading in L2 because not all reading skills can be transferred to L2 situations (Clarke, 1979), and also because L2 readers process information at a slower rate than L1 readers (Oller & Tullius, 1973).

To comprehend a text in English, the ESL student needs to understand, among other things, the denotative and the connotative meanings of the vocabulary items, idiomatic expressions and cultural references, the case relationships within complex sentences, the cohesive elements and devices of meaning relationships in connected written discourse, and finally, the use of context while making inferences. Some of his other problems (especially at the earlier stages) with respect to comprehending the print include: lack of adequate oral language competence, inability to follow the logical sequence and mood of the text, insufficient knowledge of the hierarchical structures of written discourse, and lastly, inability to go beyond the text in order to extract alternate meanings.

These problems may vary from individual to individual and from level to level, but some of them seem to persist and pose hindrances even to very advanced stages of reading English as a second language.

SOME IMPLICATIONS
FOR THE ESL READING TEACHER

Theory, research, and teaching experience in both L1 and L2 go hand in hand and constitute an invaluable asset for the reading teacher, therefore, a concerned teacher needs to keep

abreast of the current developments in both theory and research. More than anything else, he needs to draw upon conclusions that are based on observations (and self-observations, for that matter) in the classroom as well as outside the classroom. At this point, it may be worth looking at some conclusions that I have arrived at after the review of theory and research related to certain aspects of reading and reading comprehension. These are by no means definitive directives, but can be ruminated over and tried as alternatives. Alternatives are what we ESL teachers desperately need to keep ourselves and our students lively in the classroom and to enhance the desire to learn. Briefly, these conclusions are as follows:

- Reading programs in which the teacher is the sole authority in selecting materials exert a negative effect on the students. (Smith, 1978)
- The teacher's role is to activate, encourage and help students to learn to read. To do this teachers must make reading meaningful, which means seeing how it looks from the child's point. (Smith, 1978: 164)
- Setting purposeful tasks (e.g., reading a film commentary to decide whether or not one should go to see the movie) for the students before reading the text enhances their comprehension and retention and adds relevance to the reading activity.
- Silent reading should be encouraged as much as possible since comprehension is better and reading faster when meaning is obtained directly from print. Besides, oral reading can at times be extremely embarrassing, particularly for non-native speakers.
- Inferential, evaluative and value-judgment questions are preferable to "What was the Marlup poving" type questions since they make students integrate the text information and arrive at solutions. In other words, open-ended, divergent questions are more conducive to

reasoning and learning than closed-ended, convergent questions.

— Talking about what has been read (and this is what normally happens in real-life situations) can help the student to organize what he has read and to integrate it with his previous knowledge (Rigg, 1976; Page 1979-1980).

— Individual interpretations of the text based on the student's background must be encouraged rather than suppressed.

— To acquire pleasant and meaningful experience from the act of reading, students should sometimes be allowed to choose materials of their interest.

— In oral reading excessive attention to accuracy in pronunciation disrupts the meaning and communication.

— In selecting reading materials for non-native speakers, relevance is a more important criterion than text difficulty, and classroom activities should parallel the "real world" as closely as possible (Clarke, 1977).

— Some learn better through listening and some through reading. To ensure more learning and better comprehension, it would be more fruitful to expose the students to both modalities.

— Teach the students how to comprehend not what to comprehend. That is to say, teach strategies that can be useful in decoding the written message — where to look for main idea or details, when to pay attention to transitional words or phrases, how to track down the writer's viewpoint by looking at recurring themes and key-words, how to use syntactic rules, etc., etc.

— Last but not least, reading is a serious personal and social activity and should be treated as such. It should

not be taught merely for the purpose of "consolidating" what has been listened to and spoken; on the contrary, the ESL student (particularly at college level) must be exposed to speech in order to make sense of what he reads. In other words, reading is a goal in its own right — and a means of survival.

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