

AN INVESTIGATION OF QUESTIONING AND
COMPREHENSION SKILLS AS THEY PERTAIN
TO THE TEACHING OF CORRECTIVE READING

CENTRE FOR NEWFOUNDLAND STUDIES

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AN INVESTIGATION OF QUESTIONING AND COMPREHENSION
SKILLS AS THEY PERTAIN TO THE TEACHING OF
CORRECTIVE READING

by

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of the requirements for the Degree of
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ABSTRACT

The primary focus of this study is on the student with reading comprehension difficulties and the classroom teacher whose responsibility it is to help that student "read to learn". While special reading teachers could provide valuable supplementary reading instruction, they are no substitute for competent classroom teachers whose sensitivity to the total reading effort across the curriculum has been reinforced by a working knowledge of corrective reading procedures. The advantage lies in the unlimited opportunity which the classroom teacher has to observe day-by-day learning, spot incipient problems, administer the proverbial ounce of prevention, or distribute the needed pound of cure with regularity and consistency.

The concept of "reading to learn" is a fundamental component of the reading development process but is contingent upon the acquisition of basic reading comprehension skills. This writer suggests it may well be that the inherent comprehension difficulties of many disabled readers are caused not by the gradual increase in the degree of difficulty of comprehension materials as they progress beyond the elementary grades, but instead, are caused in part by a difference in the kind of comprehension required by content area materials. This understanding sets the perspective for the teaching of reading comprehension in the content areas. A corrective

reading program which utilizes appropriate questioning strategies and techniques can assist students in "learning to read" proficiently, and hence ensures that their "reading to learn" endeavours will meet with greater success. To teach well, educators must teach the learner how to do what is required of him and do so in such a way that he develops an understanding of the processes involved.

The application of the various aspects discussed in this paper will be contingent upon the learner and the specific learning situation. The corrective reading program described in this thesis, with accompanying techniques and strategies for implementation, is viewed as a framework whereby students may become proficient readers and, ultimately, independent learners. That there will continue to be students who have problems in reading comprehension seems inevitable, so long as multiple differences in students continue to exist. However, developing the abilities of the classroom teacher in corrective reading procedures could become a major force in reducing the quantity and scope of the disabled reader problem in our educational system.

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CHAPTER 1

CORRECTIVE READING

Introduction

At some point in their teaching careers the majority of classroom teachers will encounter a student diagnosed as a disabled reader. The disabled reader is one who has failed to respond to the reading programs designed to meet the instruction needs and characteristics of the majority of children. The onset of reading disability is likely a gradual process in that the child who becomes a disabled reader gets into a moderate amount of difficulty, misses some instruction, or in some other way falls behind or gets confused. The reading curriculum and the class itself go on, while the child is left behind finding himself making negligible reading progress.

As a result of these circumstances, the child may develop an aversion to reading and is quite likely to develop inappropriate reading strategies. All of these occurrences accumulate until it becomes apparent to the classroom teacher that the child has become a disabled reader because he has not learned the basic skills and abilities essential to effective reading. Faulty habits and unfortunate modes of reading have become established. The child is developing or has already developed a dislike for reading and his sense of defeat mounts higher and higher.

The classroom teacher, not unlike countless other teachers, is now faced with a situation which requires immediate attention. It seems an indisputable fact that disabled readers are with us in almost every classroom, and their presence must be acknowledged by every competent classroom teacher. Keeping the welfare of the child as the central objective and attempting to avoid the major pitfalls of the corrective reading process, a plan must be designed by the teacher to correct the reading disability. This should probably be based on the assumption that children learn differently and need programs to meet their individual requirements.

Research in reading has progressed, teachers are better trained, reading materials have multiplied, and techniques and strategies for teaching reading have improved. Nevertheless, a surprising number of students fail to make the progress in reading expected from their apparent capabilities. This phenomenon is recognized by the importance given today to remedial reading and the widespread establishment of reading clinics. However, regardless of the preponderance of remedial teachers, reading specialists, and clinicians, numbers alone dictate that not every student who is perceived to have a reading disability does have ready access to corrective reading techniques and strategies.—

5 The presence of reading disability cases in our schools is a serious problem at all levels of the academic

ladder. However, many reading difficulties can be prevented before the student reaches the remedial or reading clinic stage. It is possible for the classroom teacher to correct disabilities in their initial stages when correction is still relatively easy.

The corrective reading program in the regular classroom setting has many advantages:

1. The regular teacher can spot problems that can be prevented or corrected at their inception.
2. The regular teacher can plan a better balanced "all day program" for the student to spend more time on reading, but reading fitted to his level of attainment.
3. The regular teacher can plan opportunities for the student to put his reading to use throughout the day if the teacher is aware of the student's new achievements in gaining reading power.
4. The regular teacher is in a position to plan for some prevention and correction for all those who are reading below their capacity. Many borderline readers who could not be included in a special teacher's case load have minor difficulties or "gaps" in reading.
5. The regular classroom teacher can plan for children to work independently in available periods during the day. Provision can be made for children to work together or to help each

other. Games, devices, and seatwork exercises can be utilized.

6. The regular classroom teacher has more opportunity to know the total child, his interests, aptitudes, abilities, and limitations. Utilizing other abilities throughout the day may provide the needed stimulus, the ego satisfaction, and the course material for reading lessons to raise reading levels.

7. Using an abundance of vocabulary - controlled reading material in other subject areas so that the individual's reading assignments all day long fit his instructional level of reading is important. It is vital that reading be integrated with the total school curriculum. Reading is more than merely a subject to be taught; it is a very essential tool to be used constantly in the whole process of learning.

Reflecting upon almost fifteen years of dealing with children who have had reading disabilities, and recollecting countless discussions with classroom teachers, the major area of concern which surfaces for this writer time after time is that of basic reading comprehension. "Comprehension" is the essence of the reading act; indeed, it is the major purpose for reading, yet very many students in our schools are apparently

unable to understand what they are reading, even though they can recognize printed words. When asked to read orally, some of these students are capable of delivering a flawless performance. However, they may be hopelessly perplexed when asked about what they have read.

The primary skill that the student needs to acquire when reading a sentence or paragraph is the ability to get direct, meaningful understanding. The student must be able to recognize and recall the ideas that are explicitly stated - the main idea, significant details, sequence, directions, etc., and must be able to answer questions about a sentence or paragraph calling for literal, as well as higher-order meaning. It is felt that corrective reading strategies and techniques would be beneficial in alleviating many of the reading comprehension difficulties which students often encounter.

While there has been significant improvement in recent years in exposing the regular classroom teacher to strategies and techniques useful in helping the disabled reader, there seems to be a consensus that there is still a need for further development of corrective procedures and practices in the area of basic comprehension skills. The classroom teacher can play an important, but often overlooked role, in matching instructional materials and approaches to the needs of the disabled reader.

The primary purpose of the proposed study will be to develop specific instructional techniques and strategies

that may be used by the regular classroom teacher in setting up a corrective reading program to increase basic comprehension skills in the middle and secondary grades.

If it were possible in day-to-day, teaching to teach each student according to his capabilities, there would be less need for remedial instruction. Admittedly, even with the best teaching and the best organized, systematic program, certain children will have difficulties serious enough to require remedial instruction beyond the capabilities of the classroom teacher. However, with less than the best teaching, the incidence of severe reading disability cases will undoubtedly increase.

Francis Keppel, U.S. Commissioner of Education, stated that:

Education must make good on the concept that no child within our society is either unteachable or unreachable - that whenever a child appears at the doors of our schools he presents a direct challenge to us and to all our abilities. (Otto, McMenemy, and Smith, 1973, p. 5)

Despite well-intentioned aims of education and the best efforts of educators, every teacher at one time or another has had a "Johnny" in his classroom and has been faced with the question, "Why can't Johnny read?". Johnny has the right to be educated; indeed no one should be leaving our schools without the skill and desire necessary to read to the full limits of his capability. As educators we realize the close association between linguistic skills and school success. How then can we account for this problem?

There seems to be a consensus among educators that our educational system has an inherent weakness with regard to students of average intellectual ability who need extra and individual attention to correct specific disabilities in reading. Our present school system has, seemingly for decades, attempted to compensate for the effects of children's reading disabilities by concentrating on remedial rather than preventative methods.

We have tended to develop a "wait and see" approach, with at least one to two years of repeating a grade before there is any intervention. It is sometimes at the end of the sixth or seventh grade before "Johnny" is "discovered". Yet the longer we leave the child failing and frustrated, the more difficult the disability becomes.

It is the writer's contention that the problems of the disabled reader should be addressed immediately at their inception. An intervention program especially tailored to the child's specific reading disability is of vital importance. "Corrective reading programs" should be made available for students who are not able to realize their potential in reading.

As previously alluded to, the writer suggests that the connective reading procedure has many advantages over the remedial reading approach, and would be most beneficial if presented in the confines of the regular

classroom by the classroom teacher, rather than in separate remedial or special reading classes.

The Impact of Reading Disability

The importance of the ability to read with accuracy and understanding is unchallenged by those involved in the field of education. The individual who is diagnosed as a disabled reader should be of the utmost concern to educators and society in general. The significance of reading ability increases as a society such as ours becomes more complex and technologically advanced. A literate population has become a necessity if society is to function and ideally to improve itself.

As Jennings (1965) suggests:

Where there is a reading man, there can be a thinking man, and wherever he exists that part of the world can be better than it is. (p. 193)

John Stuart Mill (1887) states:

I regard it as wholly inadmissible that any person should participate in the suffrage without being able to read, write, and I will add perform the common operations of the arithmetic.

Continuing in a similar vein, Schubert and Torgerson (1981) postulate:

Reading is an important key to better citizenship... The health of a democracy is dependent on an informed citizenry. And in the final analysis, it is public opinion that determines the course of our national destiny. (p. 4)

Although these two views were expounded more than a century apart, they indicate the status that reading has occupied and will continue to occupy in our society.

If one considers what happens in our culture to children who fail to read adequately, the importance of reading ability becomes even more obvious. Children who experience reading disabilities are at a disadvantage both in school and in later life. In school they find that reading is often frustrating and something to avoid. As a result, such children often do poorly in other subject areas, since the ability to read is essential for all types of academic success. If reading problems are not corrected, these children are unfortunately limited in future achievement both in school and in society.

Richek, List, and Lerner (1983) express the following view:

The consequences of these reading problems upon the individual and society can be devastating. Illiteracy has personal, political and economic implications. Disabled readers often suffer intense feelings of shame and inadequacy. They may be unable to handle the demands of their schools, their jobs, and their personal lives.
(p. 5)

Obviously, there can be no compromise with the importance of reading ability or conversely with the dire consequences that reading disability can inflict upon the individual and society.

The Extent of Reading Disability

Estimates of the magnitude of the problem of reading disability tend to vary, depending on how "reading disability" is defined, and who is included in the population under consideration. Nevertheless, it is an indisputable fact that the problem is a considerable one and that it is not confined to any particular segment of the general population.

Kaluger and Kolson (1978) report studies which reveal that approximately twenty-five percent of failures in elementary grades are attributed to reading disabilities. Harris and Sipay (1975) in reviewing data for the 1973 revision of the Stanford Achievement Test, Reading Comprehension, note that statistics for the end of grade four indicated a variety of comprehension skills ranging from below the second grade up to the ninth grade and beyond.

Schubert and Torgerson (1981) cite various reading experts who estimate that ten to twenty-five percent of children in school have a reading disability. They also refer to a National Assessment of Educational Progress Survey (1973) of reading achievement which revealed that:

Twenty to thirty percent of young people in the United States aged 9, 13, 17 and 26 to 35 years cannot complete satisfactorily various reading tasks ranging from understanding words and word relationships to critical reading. (p. 2)

Dechant (1982) contends that the problem of reading disability is well documented. He states:

Recent studies lead to the conclusion that approximately 10-15 percent of school children are not reading up to their level of ability. A substantially larger number are not reading up to grade level. (p. 384)

Harris (1981) reports that the incidence of reading disability in American schools is about fifteen percent. Complicating this situation even further is the fact that Richek, List and Lerner (1983) suggest that one in every seven individuals has reading difficulties requiring special attention at some time in his life.

Recent commentary on the scope of the problem does not indicate that the situation is improving. Lesiak and Bradley-Johnson (1983) state that "for as many as fifteen percent of the school population, learning to read is a difficult task, or at least a task in which they do not achieve" (p. 3). Perfetti (1985) observes "there is continuing widespread concern about the ordinary failures of reading experienced by countless numbers of children" (p. 3).

In an analysis of the most recent National Assessment of Educational Progress Report: Reading, Thinking, and Writing (1981) which dealt in part with the inferential comprehension skills of seventeen year-olds, Purves (1984) noted that:

About ten percent remained unable to read even simple material... The evidence cited by older students does not reflect effective strategy for approaching a text; explanation remained superficial and limited.

Findings such as these, in survey after survey, highlight the need for determined efforts to provide school situations that can deal with the realities of individual differences in reading abilities.

While it may be a valid argument that such studies and reports are not reflective of the local situation because they are based upon studies carried out in the United States, one cannot help but wonder if the situation is any different here. Undoubtedly it might be difficult to cite statistical evidence that would support such a contention, but one could still argue that students in Newfoundland and Labrador are equally deficient in reading skills. It is the writer's opinion that classroom teachers in many parts of the province are genuinely concerned with the extent of reading disability found in the classroom. This concern is in part supported by the recent comprehensive report Leaving Early - A Study of Student Retention in Newfoundland and Labrador (1984) which identifies "low scholastic and reading ability" as a major problem.

The predicament of the disabled reader is not a recent development in education. Educators have wrestled with the problem for decades; indeed perhaps since the inception of reading instruction. As evidence of this, almost thirty years ago Betts (1957) cited various authors who estimated that eight to fifteen percent of the school population had varying degrees of reading disability.

As previously mentioned, reports indicate that the magnitude and complexity of the disabled reader's problems in our schools is striking. But perhaps statistics and reports are superfluous. Everyone who has had school experience, either as a teacher or student, is most likely to be aware of the problem, because disabled readers are present in almost every classroom.

In light of the seemingly widespread problem of reading disability, and because reading can be regarded as a "tool" skill that influences a child's academic progress in all school subjects, it cannot be overemphasized that reading failure is a major factor in educational failure. Reading has come to hold the most significant place in education as a means of communication in a highly literate society. Those concerned with helping the child overcome his disability in reading must have the necessary knowledge and expertise in corrective procedures of teaching reading so that the ultimate goal - to help the child to help himself - is achieved.

Corrective Reading: A Definition

Bailey and Foreheim (1983) state that:

Schools are now expected to educate all children rather than to sort out higher performers...and to encourage numbers of that group alone to go on with their education. (p. 198)

Children who are reading below their potential need reading programs that are planned to teach them the

specific reading skills not yet mastered, using the best methodology, materials, and motivation possible. Disabled readers are readers who "should be" performing better than they are. They exhibit an achievement level that is not explainable by lack of potential.

Efforts to help these children are broadly described by most educators as "remedial reading". Within this broad heading a distinction may be made between "corrective reading" and "remedial reading" programs. Harris and Sipay (1975) assert that:

The two differ in four respects; (1) where the treatment takes place, (2) who provides the treatment, (3) the number of children treated in each session, and (4) the severity of the problem treated. (p. 15)

Corrective reading occurs within the framework of regular class instruction and is conducted by the regular classroom teacher for groups or subgroups of children whose reading disabilities are detected in daily or periodic assessment of skill development. Remedial reading occurs away from the regular classroom in or outside the school, and is conducted by a teacher with special training in reading for small groups or on a one-to-one basis.

Otto, McMenemy and Smith (1973) suggest that if a case is uncomplicated and diagnosis indicates that straightforward skill development will overcome the problem, then the case is corrective, not remedial. They state:

On the other hand, if diagnosis determines that the level of basic skills is only part of the problem and that it has been complicated by biological, psychological, or environmental deficits, it is a remedial case and the pupil needs a considerably different program. (p. 8)

In actuality, the distinction between corrective and remedial reading is a somewhat artificial one. The problems treated are more likely to differ in degree than in kind. Furthermore, developmental and corrective reading have much in common, for seldom does any individual reveal his weaknesses at the first presentation of any written material. Corrective teaching should be a normal part of good teaching.

Generally speaking, corrective reading is designed for those individuals who have not profited from regular classroom instruction. Carter and McGinnis (1970) contend:

Corrective treatment should be recommended for individuals...who are reading two years below their grade level, who are mentally and emotionally mature, who are fairly well adjusted socially, and who can profit from individual or group instruction. (p. 28)

Such students, so selected for instruction, may benefit from corrective procedures and at the same time continue their studies in their regular classroom. Reading disabilities of this nature would probably not warrant study or intervention by a clinical team.

It is tempting to speculate on the results that might be achieved if all teachers were to concentrate on the

teaching of reading. Would the need for remedial reading disappear?

It seems probable that even in an educational utopia, some children would still have reading problems that resist correction. Utopian teaching would likely lessen the number of reading disabilities, but would not eliminate them, and the need for special remediation of severe reading disabilities would likely remain.

Responsibility for Corrective Reading

It is this writer's contention that it is likely many disabled readers who are placed in a remedial reading class would be better served if their disabilities were treated in the regular classroom by the regular classroom teacher. Ruply and Blair (1979) support this concept when they state:

While reading disability will continue to exist due to factors outside a teacher's influence, it is the author's contention that a great many reading problems could be prevented or corrected with early identification and effective instruction. (p. 367)

Kress (1971), in differentiating between corrective and remedial reading problems, points out that the greatest number of disabled readers fall into the "corrective classification" and as such should be dealt with by the classroom teacher. Bond, Tinker and Wasson (1979) observe that there are some children whose reading growth is:

so atypical, so different from that of the usual child, that they constitute a troublesome instructional problem. Often the classroom teacher can diagnose these difficulties and give these children the corrective & reeducative help that they need. (p. 53).

Disabled readers are present in almost every classroom and their presence should be acknowledged by every classroom teacher. Zintz (1972) takes a forceful stance on the issue when he states:

The regular teacher is the key person who must accept responsibility for identifying the child who is not making satisfactory progress...the classroom teacher must do the remedial or corrective instruction in 90 percent of the cases. (p. 10)

Otto, McMenemy and Smith (1973) suggest that the vast majority of disabled learners can be taught successfully by the classroom teacher, and only extreme cases need to be referred outside the classroom.

Otto and Chester (1976) make the following pertinent point:

It is fallacious to assume that all - or even many - children who fail in reading have problems that are too complex to be dealt with by classroom teachers. (p. 226)

Disabled readers may well be with us always, in light of the fact that there seems to be at present no reading method or approach that guarantees total freedom from disability. Teachers need to be well versed in dealing with children who are perceived to have developed reading disabilities. Dechant (1982) summarized the views of many educators in the field of reading as follows:

Although the nature and severity of a reading problem sometimes calls for the intervention of the reading specialists, the main responsibility always remains with the classroom teachers. The classroom teacher is the first intervening agent. The competent classroom teacher is the surest means of prevention of reading disability. (p. 383)

One of the basic tenants of this writer's view of reading instruction is that it may not be sufficient to rely on the developmental reading program of the school to achieve maximum results. The pursuit of excellence requires an efficient developmental program, but it in all likelihood also requires corrective help for those students in each classroom who might achieve at a higher level if given additional and appropriate instruction.

Cheek and Cheek (1980) suggest that:

When teachers understand that the process of reading is not an exact step-by-step procedure followed in the same way by all students, these differences in learning are better understood. (p. 10)

Such an understanding of the reading process helps one to realize that the traditional organizational plan using one set of materials cannot be successful in teaching all students to read effectively.

Corrective instruction is a continuous program in which many problems, if detected early and handled appropriately, might be eliminated. The regular teacher of developmental reading, writing, and informational subject matter should be involved in corrective efforts. The more involved in corrective teaching the regular

teacher becomes, the fewer the children who will require the services of a specialized remedial teacher.

The Need for Corrective Reading

It is important to point out that many educators today are concerned about the overemphasis on remediation and the frequent ignoring of the prevention of reading difficulties. It may well be that we are thus developing, inadvertently, disabled readers in our education system at a rate much faster than will we ever be able to remediate.

Although we seemingly have done a better task of remediation than of prevention, it is naturally better to prevent than to remediate; it is far better to deal with a problem in the classroom than to wait until the student becomes a disabled reader. Perhaps, in retrospect, we have not placed enough emphasis on ways of preventing reading disability. We may well have been satisfied with the attempt to cure.

Heilman (1972) states:

The early detection of impairments and immediate attention to them are cornerstones of effective reading instruction. Although this may be obvious, emphasis in our schools is still on cure, not prevention. (p. 13)

Green, Lyles and Eissfeldt (1980) concur with this view when they observe that educators have known for some time that "the sure way to cure a reading disability is to prevent it from developing" (p. 50). It would seem likely

that an increased emphasis on corrective rather than remedial procedures for some disabled readers would provide greater opportunity for preventive strategies to be employed against reading disabilities.

One of the lessons that has been learned from the medical profession is that in combating diseases many people become seriously ill because someone either ignored the symptoms or did not read them correctly. Children likewise often become disabled readers because those responsible ignored or did not read the symptoms of reading disability correctly. Children's seemingly innocuous difficulties in reading may snowball and the resulting disabilities are most often instances as Dechant (1968) says "of an accumulation of unmet reading needs".

It cannot be overemphasized that while educators are diligent in their attempts to develop good reading programs to correct reading disabilities, one area of great weakness remains their failure to prevent some forms of reading disability. Schools often treat children en masse, and generally only after a serious disability has developed is the child identified and given special treatment.

It is the writer's belief that it would be pertinent to direct our attention to the prevention of reading disabilities. Since educators insist that children start school at the age of five years, there is an assumption that all five-year-olds are ready to learn the "three

R's". Likewise, the thirty or more students in any given first grade class, regardless of their individual differences, are generally taught by one or more approaches, depending upon the class groupings for instructional purposes. Hence, there is evidently an assumption that in any given class most children behave in almost the same manner, and will respond adequately to one or more of the reading programs or approaches currently in vogue. These are erroneous notions but seemingly popular practices.

Bernstein (cited in Halliday, 1973) states that:

The child who does not succeed in the school system may be one who is not using language in the ways required by the school. (Halliday, 1973, p. 18)

One is puzzled as to why our curriculum and methodology has continued in such a direction in light of the concerns expressed about the disabled reader. There seems to be an incompatibility between the methods of teaching reading and the need to cater to the individual needs of the disabled reader.

In every case where a child demonstrates deviation or difficulty in learning to read there should be an adjustment in the way he is taught. If educators demand that all children attend school, then teachers must provide appropriate education for each child and must also accept, in practice as well as in theory, the concept of individual differences. It would seem that the approaches and strategies of a corrective reading program would

provide an excellent avenue to incorporate these principles into the development of a sound and effective reading program for disabled readers. Good corrective teaching is not very different in theory from good developmental teaching. As Otto and Chester (1976) suggest; "Good corrective teaching, then, is good teaching at its best" (p. 226).

This writer advocates an increased emphasis on the role that corrective reading procedures should play in alleviating some of the problems of disabled readers and suggests that sometimes the ready availability of special remedial services present in most schools are perhaps depended upon to too great an extent. Although the remediation component of reading instruction can be beneficial for some children, there are major pitfalls for the teacher who assumes that remediation classes are the panacea for all reading disability cases.

Putnam (1971) ascertains four major problems with the "remedial only" approach. These include the large number of adult illiterates, the increasing number of remedial cases, the rising cost of remedial programs, and the traumatic experiences of some disabled readers in remedial programs.

Bean and Wilson (1981) echo many of the same concerns when they observe the following problems: the number of students requiring assistance, the separation of classroom

and specialists' programs, the stigma of the remediation program and the concept of reading as a separate subject.

Given the flexibility in guidelines regarding admission to special remedial programs and the limitations in teaching time, specialists may have difficulty serving all of the children who could profit from individualized help. Dechant (1968) says:

There needs to be adequate provision for remediation of most reading disabilities in the regular classroom. We simply cannot refer everybody to the remedial teacher. (p. 7)

Spache (1981) reiterates this point when he states:

The greatest problem that most remedial teachers and reading clinics face is the tremendous number of potential applicants who need their services. (p. 8)

Otto and Chester (1976) suggest quite succinctly that:

It should be quite clear that there never will be an adequate supply of specialists to meet all the needs for corrective and remedial teaching. (p. 225)

The ultimate responsibility for corrective teaching almost always rests with or comes back to the classroom teacher. Unless a disabled reader can function with reasonable efficiency in the regular classroom, remedial or corrective teaching has not fulfilled its promise. By necessity the classroom teacher must play a critical role in the attainment of this goal.

Separation of the classroom and the remedial instructional programs may be the greatest pitfall of the remedial approach to reading disabilities. If the

remedial program becomes divorced from the ongoing program of the school, (benefits to children may be minimal. Children with reading disabilities may return to the classroom where they are confronted with materials that are too difficult, or they may be asked to participate in instructional activities that have little meaning for them. Reading specialists and classroom teachers may have little opportunity or may encounter difficulty in planning congruent objectives for children, thereby creating a dissonance between the remedial and the developmental programs.

Allington (1986) observes that:

A result of this separation is the fragmentation of the school experience... These students are often required to deal simultaneously with reading and mathematics instruction from two different textbooks taught in two different styles. (p. 264)

As previously noted, "fragmentation" of the reading program can be quite pervasive, with programs having little congruence between classroom instruction and remedial instruction. Often remedial students receive instruction that does not supplement their core reading curriculum, and sometimes the reading materials used represent distinctly different models of the reading process. The end result is that the remedial students, who were initially experiencing difficulty in comprehending reading material, may be offered instruction that seems likely to confuse them even further.

The stigma of the remediation program is a very real one and one which may defy being ameliorated. Children may dislike and resent being singled out to receive remedial help if the remedial classes are labeled to suggest that only specific types of children are selected. Peer pressure and even attitudes of the school staff may contribute to the students' feeling of being "isolated" and "different".

Since the beginning of the learning disability movement in the early 1960's the separate grouping of disabled readers has been advocated by various experts in the field of reading. However, Dechant (1981) points out that many of these same writers now feel that "in the future grouping practices may become more flexible, with more subgrouping in the regular classroom" (p. 371).

Bean and Wilson (1981) suggest that the passage of Public Law 94-142 in the United States may be one other factor which may in the future discourage the pulling-out of students from the regular class for remedial work. This law, whose influence is already being felt in Newfoundland, gives widespread support to the notion of "mainstreaming", or the placing of disabled learners in the regular classroom for instruction.

The perceived conception of reading as a separate subject is one that has to be dealt with when disabled readers are placed in a remedial class setting. If teachers believe that it becomes the responsibility of the

remedial specialist to teach reading, then little effort may be exerted by both reading and content teacher to provide for the reading needs in their classrooms.

Otto and Chester (1976) state that:

All too often there seems to be an implicit assumption on the part of many teachers that disabled readers and remedial teaching are the responsibility of specialists. (p. 225)

Allington (1986) concurs on this point when he states:

Classroom teachers often consider themselves relieved of the responsibility for low achievement,...that now becomes someone else's problem.... As the classroom teacher's feeling of responsibility decreases so does the instructional effort in the classroom. (p. 274)

Whenever the remedial program is offered during the regular school day some regular class instruction may be missed. Allington (1986) calls this missed instruction "interference" with the regular core instruction. Interference is present when the compensatory program causes unintended problems for classroom teachers in providing coherent and coordinated instruction for the disabled reader.

Though generally considered "extra" assistance, the remedial instruction often supplants a significant portion of the classroom reading or language arts instruction, so that the remedial student may rarely receive a greater amount of actual reading and language arts instruction time. Hence the employment of corrective reading procedures may avoid many of the major pitfalls of the

remedial reading process and provide some obvious benefits to the student. The disabled reader is present in the classroom throughout the day, and is able to be presented with opportunities to alleviate his disability in a "real-life" setting. Except for the possible need to use some instructional materials different from that used by children at grade level, the child with a corrective reading problem presents no new instructional challenge not found in virtually every average classroom.

It is this writer's belief that it is the task and responsibility of educators to assist the disabled readers present in the classroom in achieving their potential capacity in reading. It is this type of development within a student's schooling to which Maslow (1968) refers as self-actualization:

Self-actualization is a relatively achieved state of affairs...it is rather a hope, a yearning, a drive, a something wished for but not yet achieved.... Potentialities not only will be or could be; they also are. (p. 160)

One cannot dispute the proposition that major efforts should be devoted to improving the general efficiency and effectiveness of the regular classroom teaching of reading. In the presence of such teaching the frequency of reading disabilities may diminish. Even with the best efforts of teachers to meet individual needs, some children may well drift into reading difficulties.

Detection of the child's weaknesses and implementation of strategies to help the child overcome

these weaknesses are integral parts of the classroom teacher's methodology. Such corrective instruction is in the words of Harris and Sipay (1975) "a sort of educational first aid". If it were possible that corrective teaching could be taken for granted as part of every effective teacher's procedure, the need to call it by the special name "Corrective Teaching of Reading" would diminish. In this sense, corrective reading may lose its distinctive character by becoming a normal rather than an unusual procedure.

Corrective Reading in the Content Areas

One of the major tenets of a corrective reading program is that instruction in eliminating reading disabilities cannot be conceived as a function of only certain teachers or departments in a school. It is a total school activity. Only when this condition is attained will the overall needs of each child in all reading situations be met. Throughout the school program there are demands for efficient use of the processes of reading. The most appropriate situations for development of various facets of this process, such as reading comprehension, may arise in different areas of the total school program.

In using corrective procedures to treat reading disability, each teacher will have to adjust reading

requirements to the level at which each child can function in order to gain new experiences and improved skills. The necessity for understanding learning and each learner, then, confronts all teachers, regardless of the school levels or academic areas within which they work.

Page and Pinnell (1979) make a pertinent point concerning the need to improve reading skills by utilizing the content areas. Since comprehension difficulties may comprise a significant portion of the disabled reader's problem and since reading to comprehend necessarily involves content, the connection between the two is an obvious one. They state:

A fertile area of reading instruction is the content areas of school curriculum... Some of our best opportunities for teaching reading comprehension occur in the content of social studies, science, or math. (p. 49)

Indeed, many of the reading disabilities which educators seek to remedy may be embedded in the curricular materials of the conventional subject matter areas. Certainly "reading across the curriculum" strategies are fully recognized as valuable and necessary. However, many efforts to implement this approach are haphazard and may miss the mark because teachers may not understand their roles in the process.

A number of studies have indicated that content area teachers are confused or unconcerned with the reading process in their respective subject areas. Austin and Moores (1963) conclude that teachers feel there is not

sufficient time to teach everything and therefore it is more important to cover content than to teach reading skill in the content fields.

The observations of Ash (1985) corroborate this view. He suggests that because of the school's pursuit of high pass rates on exams, the stress placed on "covering content" and "how to pass", the development of language facility occurs, "if at all, in spite of the system - not because of it" (p. 4). A similar observation by Baldwin and Readence (1980) supports the view that content teacher's attitudes and beliefs are often not conducive to the development of sound content reading programs.

Dechant (1981, p. 356) states "the acid test of a reading program is the transferability of the learnings it provides to content areas". Without a doubt the goal of educators needs to be the infusion of reading skills instruction into every subject area where reading is the prime medium for learning. Bacon, McCoy, Cuevas, P., Cuevas, S., and Rachel (1983) suggest that there is a danger in assuming the concentration on providing instruction in the various reading skills will automatically produce mature, flexible readers. Such is not the case. There is no magical transfer of learning skills to the content areas.

Teachers have historically tended to emphasize the "learning to read" skills as outlined in basal readers and have often passed over those "reading to learn" skills

needed for content reading. This may be an inherent weak link in our teaching of reading skills. As Tonjes and Zintz (1981) state:

There is little assurance in the literature that there is an automatic transfer of learning from one type of reading to the other. (p. xvi)

Spache and Spache (1986) support this view and observe that simply because students develop basic reading skills, it cannot be assumed that they will therefore also grow in subject-matter achievement.

All teachers, regardless of their individual teaching assignments, would probably agree that the ultimate goal of reading must be that of gaining "meaning" from what is read. Hill (1979) suggests that reading skills can be developed, and the teaching of content can be enhanced by more effective use of material that is meaningful to the student. It is generally accepted that a student's skill in reading develops best when he is instructed in its use at the point that his need occurs.

Content teachers are aware of numerous students who have difficulty understanding content area reading despite their having received both basic skills instruction and corrective training in the regular classroom. Hence the relationship is an obvious one. As Robinson and Rauch (1966) maintain:

Any content area teacher who uses the medium of print as an instructional tool must accept the responsibility of helping his students cope efficiently and effectively with the reading task of the specific discipline. (p. 11)

In a similar vein Kennedy (1981) suggests that regular classroom teachers must "teach all the subjects - both content and the reading skills necessary to understand them" (p. 240).

It is important to remember that when teachers accept and practice the interrelatedness of reading skills instruction and content instruction a major problem will be significantly lessened. Teachers will no longer have to be concerned with the problem of "transfer of learning" if reading skills development co-exists with the acquisition of content material. As Rose (1984) states, "the ambiguity of the phrase notwithstanding, 'every teacher a reading teacher' is sound educational philosophy" (p. 5).

A reading program which utilizes the integration of reading skills and content instruction is the cornerstone of an effective reading program, especially for disabled readers who must be helped to read independently and meaningfully if they are to avoid failure.

Robinson (1978) provides a succinct definition of an effective reading program. He suggests that a reading program should be considered the complete set of skills and strategies needed by students to deal with the array of print materials to be encountered during the school career. Such a program would be effective not only in helping students become better readers but also in helping students become effective assimilators of information.

Before disabled readers can read efficiently in the content areas, they must be skillful in a number of fundamental reading practices (Dallman, Rouch, Char and DeBoer, 1978). Some of these skills are promoted by the training given in the basal reading program, but most of them should be developed in realistic practice with content materials.

In content reading, students must learn how to use the basic skills to read widely different types of materials for increasingly complex purposes (Thomas and Robinson, 1982). In addition to recognizing the words in a textbook, they should be able to comprehend the content accurately enough to use it in making generalizations, drawing inferences, and arriving at answers to questions which require some analysis. Kennedy (1981) suggests that success in content reading requires specialized or relatively sophisticated use of the three major types of reading skills: general reading, word recognition, and comprehension.

Comprehension, essential for reading, is of the utmost importance to the disabled reader for it enables him to experience meaning in the content areas. Unless students get clear-cut, definite impressions in reading informative materials, the misinterpretations and half-understandings which result can completely distort the reader's quest for meaning.

It is this writer's contention that one of the major reasons why comprehension of content matter, and indeed of all reading material, is so difficult at both the elementary and secondary levels for the disabled reader is the lack of specialized comprehension skills. The indispensable role of content material in reading, and the indispensable role of reading in content material, should be utilized by teachers to help students adapt their knowledge of basic comprehension skills to the appropriate use demanded by the print material which confronts them.

The Need For Basic Skills Instruction in Reading Beyond the Middle Grades

The concept of "reading to learn" is a necessary component of the reading development process (Mullins, 1986). However, for such a development to be realized by our students one accepts its contingency upon the acquisition of basic reading skills. Hence, one can well appreciate the quandary of the disabled reader when he often appears in the upper elementary and junior high levels of our educational system.

If the generally accepted idea that reading development is a lifetime endeavour is to be achieved by our students, there seems to be a dire need for a systematic approach to the development of basic reading comprehension skills - specifically in the areas of main

idea, locating details, sequence, cause and effect, and inference skills - after the primary and lower elementary grades.

Having been a school teacher in Newfoundland and Labrador for almost fifteen years, this writer has observed little evidence to suggest that the plight of the disabled reader is being addressed to any great extent within the confines of our present school system. Many students, for sundry reasons, leave elementary school not having grasped the fundamental ability to comprehend accurately what is being read. Because the difficulties of the disabled reader are not attended to as a part of a systematic process in teaching reading at the upper grade levels, these students often experience difficulty - even failure - in their school careers. They are lacking the basic and specific tools needed to develop reading proficiency. If our goal as educators is to guide our school students towards becoming proficient readers, then the acquisition and utilization of these skills is of paramount importance.

When we are confronted by a student who is unable to interact with the text and thereby gain understanding and meaning, what can be done? This writer suggests that we must offer the disabled readers in our schools an alternative to the present state of affairs. The alternative may well be that of a corrective reading program in the regular classroom which emphasizes

development of basic reading skills within the context of regular content learning. Only then can the disabled readers in our classes become the efficient and independent learners they deserve to be.

It seems an indisputable fact, given the prevalence of commercial remedial, compensatory, and supplementary reading programs available, that basic skill deficiency is recognized as an area of concern at the primary and lower elementary grades of our school system. Less attention seems to be directed towards the disabled readers who appear in the upper grade levels, especially those above the 6.0 grade level. However, the problem does exist, as evidenced by a number of reputable companies and organizations who have developed reading skills programs which attempt to focus instruction towards ameliorating problems in basic skill deficiency at the higher grade levels.

The majority of these programs are based on a number of concerns previously alluded to by the writer. These are: (1) When students participate in a reading situation, individual differences exist in both learning rate and learning capacity. (2) Growth and development in reading, like physical growth and development, cannot be regulated by "the semester or term". Nor will it occur at the same rate for all individuals. (3) There exists a reasonably adequate body of knowledge concerning the prerequisites needed for proficient reading, comprehension

to occur. (4) The limits to which a student may gain in reading skills and level of comprehension during the sum total of his elementary and secondary school years is unknown because of the lack of a developmental reading program that is both unified and individualized to meet specific reading needs.

Based on these principles a number of reading programs have emerged which highlight the needs of disabled readers beyond the 6.0 grade level. For example, the Reader's Digest Reader's Workshop II (1983) whose readability level spans from 4.0 to 9.9 is a supplementary reading skills program for readers in the upper grades who are experiencing difficulty with basic reading comprehension skills. This program is based on the concept that reading comprehension can be significantly improved, first through organized practice with well-defined and isolated reading skills, and then by working with a number of uninterrupted reading passages into which the skills have been carefully interwoven. The Readers' Workshop II offers students practice in twenty-five reading skills - skills generally acknowledged by reading teachers as those most necessary to the student's achievement of overall reading competency. Some of these skill areas include main idea, sequence, cause and effect, details and inference skills. It is felt by the publishers that such a process results in mastery of the

basic skills and improved reading comprehension in all reading situations.

Similarly, Skillpacers, Grades 7-9 by Random House Publishers (1978), is a reading skills program which focuses individualized practice and instruction in fifteen basic reading skills. A cross-section of the skills included are main idea, recall of factual details, cause and effect, locating answers, judging significance, and drawing conclusions. The program is viewed as one that provides instruction in the basic skills of general reading to complement a parallel program of teaching reading in each of the major subject areas.

In addition, the Durrell Listening - Reading Series: Advanced Level and the most recent SRA Reading Laboratories: IIIA and IVA acknowledge that there are markedly different instructional needs among students reading above the 6.0 grade level. The SRA programs are geared to the wide differences in the abilities of students and are especially directed towards those students who are reading below their potential capabilities. An underlying principle of the programs is that the specific reading and study skills instruction provided will result in an easier transfer to the specialized reading and study problems encountered in the subject areas. By ensuring that students have "learned to read" proficiently, it becomes highly likely that their

"reading to learn" endeavours will meet with greater success.

CHAPTER 2

COMPREHENSION

Few will deny the importance of comprehension in reading, for without it, reading has little value. The term "comprehension" is one that is often used glibly by many teachers and reading experts. Yet the meaning given the word differs greatly from one user to another.

What, then, is comprehension? What is involved in the processes that begin with the reader's first glance at a printed page and end with his understanding of the message the writer is attempting to convey via the printed page?

Much of today's professional literature on the topic of reading comprehension can be divided into two opposing viewpoints: the comprehension subskills approach and the holistic approach to the teaching of reading comprehension. Rather than to select one view over the other, it is this writer's contention that a reflective overview of our knowledge of the nature of reading comprehension is required.

A Historical Perspective

According to Robinson (1977), little attention was paid to reading comprehension prior to 1908. Emphasis was placed on accuracy of the student's oral presentation and

elocution. Experimentation with meaning focused on the isolated word.

Cleland (1968) reiterates this viewpoint when he states:

Before 1915 when early emphasis in reading was on its oral aspects, not much attention was paid to comprehension. In fact the term is rarely found in the literature. (p. 16)

Huey (1968), in his germinal work on reading research and instruction, reported experiments with isolated word comprehension but indicated a dissatisfaction with such measurements. However, he "lifted" the concept of meaning beyond the word level:

When a single word is presented, therefore, it suggests but a part or an aspect of this total meaning and is felt as inadequate and artificial unless given its sentence context. (p. 167)

By 1916, Judd (cited in Robinson, 1977) was referring to comprehension of continuous discourse as "the quality of reading". In 1917, Gray (cited in Robinson, 1977) spoke of comprehension as "the obtaining of meaning through reading". Also, Thorndike (1917) viewed reading as:

a very elaborate procedure, involving a weighing of each of many elements in a sentence, their organization in the proper relations one to another, the selection of certain of their connotations and the rejection of others. (p. 425)

The teaching of reading comprehension became topical after Gray (1924) called for a new emphasis in reading instruction in "intelligent silent reading". Gray used the term "comprehension" to denote the obtaining of

meaning through reading. Guszak and Hoffman (1980) suggest that:

Gray introduced the term largely in relation to what was perceived as an overemphasis on oral reading in schools. He felt that reading could not occur without some degree of comprehension. (p. 309)

Meaning was also viewed as of primary importance in The Horace Mann Readers published in 1912 (cited in Tovey and Kerber, 1986).

The principle here involved is nothing less than recognition of the truth that, as children are essentially thinking beings, we must in dealing with them "let thought lead". In teaching children to read there is no principle of more fundamental or more practical importance than this. For whatever is learned under the impulse of the thought is more easily learned and more vitally remembered than anything learned by mere repetition. (p. 7)

Kallom (1920), in an early attempt to list the sequential steps of how meaning is acquired, arrived at the following conclusion:

Reading oral or silent means the recognition of the printed word as a symbol and a correct interpretation of the symbol into a picture for which the symbol stands. This is not ... a simple process. It may be analyzed into the following factors:

- (1) Correct visualization of each word.
- (2) Knowledge of the various meanings of each word.
- (3) Choice of the correct meaning as shown by context.
- (4) Forming the correct relations between these meanings in order to interpret phrases and clauses.
- (5) Forming the correct relation between phrases and clauses to interpret sentences and paragraphs. (p. 367)

It is intriguing to note that the author confined his comments to comprehension of words, phrases, sentences and

paragraphs and neglected to mention comprehension of longer discourse.

Although a number of definitions of reading comprehension were generated during the years from 1920 to 1955, Yoakam (cited in Cleland, 1968) included many of the principal ingredients as well as the doubts from the varied definitions when he stated:

The term "comprehension", which is used to represent the general comprehension of meaning in reading, has never been completely described.... It seems likely that comprehension is a complex which involves the mental process of recognition, or association of meaning, evaluation of suggested meaning, selecting of the correct meaning, and generalization based on the meanings of details involved in a context. (p. 18)

Throughout the 1960's and early 1970's the field of reading comprehension remained an area of increasing concern and consequently received its share of research and experimentation. The proposed approaches and strategies continued to be diverse and varied as reading experts grappled with the term "reading comprehension".

Tinker (1965) observes that:

To become a mature reader, one must be able to comprehend all printed material which will serve his purposes. And to achieve this ability, development of the thinking side of reading is essential. (p. 39)

Bond and Wagner (1966) present comprehension as being composed of basic abilities outlined under the general headings of word meaning, thought units, sentence sense, paragraph organization, and total selection organization. Cleland (1968) suggests that comprehension is a complex

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process of bringing meaning to the printed page so that the reader can "establish rapport with the author".

Johnson (1968) describes comprehension:

Whether or not the child can use reading to meet his needs becomes the empirical test of his success as a reader. (p. 55)

Smith (1971) succinctly defines comprehension as "the reduction of uncertainty".

During the past decade there seems to have been some further change in the conception of reading comprehension. The concept of "prior knowledge" has become more prevalent in approaches to reading comprehension. Pearson and Johnson (1978) contend:

Comprehension is building bridges between the new and the known.... Comprehension is active not passive; that is, the reader cannot help but interpret, and alter what he reads in accordance with prior knowledge about the topic under discussion. Comprehension is not simply a matter of recording and reporting verbatim what has been read. Comprehension involves a great deal of inference making. (p. 24)

Smith (1978) concurs with the "prior knowledge" theory of Pearson and Johnson when he states:

The basis of comprehension is prediction and prediction is achieved by making use of what we already know about the world, by making use of the theory of the world in the head. (p. 87)

Guszk and Hoffman (1980) are in general agreement with this approach to reading comprehension. They conclude that comprehension is said to occur when an individual can successfully call upon an existing schematic structure to account for an experience. They

suggest that in this sense comprehension is neither passive nor a totally receptive process.

The most recent of theoretical perspectives dealing with reading comprehension continue to show a variance among opinions ranging from one extreme to the other. Some researchers contend that reading comprehension cannot be taught. It is a simple matter of language or intellectual ability acquired once a student has learned to decode; to improve comprehension one should improve language and reasoning abilities. Other writers maintain that comprehension can and should be directly taught as part of the reading process because it is the heart of reading.

Johnson (1983) suggests that teaching comprehension should be viewed as:

a process of using the clues provided by the author and one's prior knowledge to infer the author's intended meaning. (p. 9)

Spache and Spache (1986) state:

Recent studies by tests and interviews are beginning to raise questions about the multiplicity of comprehension skills... It seems that the comprehension achieved by pupils is largely determined by what associations the teacher stimulates. (p. 544)

Anderson, Osborn and Tierney (1984) propose that reading comprehension is not a unitary process. They assert that:

Rather, it is a complex process comprising a number of interacting subprocesses. Nor is reading comprehension a single ability. (p. 4)

Smith (1984) observes that no theory of reading, and hence reading comprehension, is likely to be of substantial utility in education unless, as he states:

it reminds teachers and researchers alike that the skill of reading remains largely a mystery because so much of it is embedded in the complex structure and functions of the brain. (p. 70)

These definitions and approaches to reading comprehension, representative of an entire host, seem to raise more questions than they answer. The general strand of "reading as thinking" has tended to pervade most theories of reading comprehension expounded during the 20th century. It would seem that this vague and undoubtedly broad description of reading comprehension almost exhausts the accumulated knowledge to date on this fundamental intellectual process. This writer cannot help but concur with Robinson (1977) that reading comprehension is indeed an "elusive concept".

Implications for Teaching Comprehension

The "elusive" nature of reading comprehension should not deter the classroom teacher from attempting to develop a construct of comprehension with its accompanying insights into the intellectual processes used by the child as he derives meaning from print. It is the writer's contention that every teacher should become as informed as possible concerning the nature of the reading process. A teacher's concept of the intellectual processes employed

as a child comprehends a passage will most likely reflect the reading atmosphere the teacher creates for the child.

It is the writer's opinion that some caution be exercised before translating research and theory into practice in the classroom. A direct conversion, whether on the level of specific assistance to teachers or as a complete instructional program, may lead to difficulties. A good idea for use in a limited context may become inflated into a system of teaching comprehension to entire populations of readers.

If comprehension is a thinking process, the classroom teacher needs to ascertain the strengths and weaknesses of children as they engage in this thinking process through the use of various materials in different situations. Learning should be directed towards integration of ideas.

When children experience difficulty in reading comprehension, there may be a variety of reasons, but it is possible that the method used may be simply unsuitable for these particular children. Flexibility, versatility, and ingenuity seem essential to the successful teaching of reading comprehension because of the individual differences in the way children learn. The writer does not suggest that one method is superior to another, but simply that some methods, practices, or approaches are likely to work better with some children than with others.

It is the classroom teacher who has the greatest influence on a child's progress in reading. It is the

responsibility of the classroom teacher to discover where each child's weaknesses lie and to be sufficiently acquainted with the various methods in order to select and employ that method which might be most appropriate in correcting the specific disability. The most important criterion involved in the teaching of reading comprehension may not be so much the method being adopted but the individual classroom teacher's faith and enthusiasm in the method being used.

CHAPTER 3

THE ROLE OF DIAGNOSIS IN CORRECTIVE READING

Corrective reading instruction is most efficient when it is aimed towards the specific needs of the individual students in the classroom. But before instruction can be individualized it is necessary to determine how the student reads, what skills are deficient, and what new skills the student is ready to learn. This process is generally referred to as diagnosis. Karlsen (1980) suggests diagnosis is more than simply analysis of the basic causes of reading disabilities. It is oriented towards the future and is most efficient when it helps the classroom teacher arrange meaningful and effective corrective learning experiences that will enable each student to become a skillful reader.

Historically, classroom teachers have not felt the need, nor in actuality have they been encouraged to diagnose reading problems in the classroom, because this was considered primarily within the purview of the reading clinician or specialist. This writer suggests, however, that every teacher should grasp the significance of gaining insight and understanding of his students' reading capabilities, more especially so if they fall into the category of disabled readers.

Unfortunately, for many teachers the word "diagnosis" suggests something that is beyond the realm of their

capabilities and responsibilities. Constraints of time and misunderstanding about what comprises diagnosis are most often cited as reasons for not becoming involved. Hence we are confronted by what seems to be an impasse regarding the classroom teacher's effective handling of reading disabilities. We must acknowledge the fact that teachers are busy and that diagnosis can be time consuming. We also readily accept the obvious benefits of careful analysis of the capabilities and weaknesses of our students. However, since critical instructional decisions hinge on the individual diagnosis, time investments made prior to the delivery of corrective reading strategies are highly defensible (Henk, 1987). Therefore, a reconciliation of the two is of the utmost importance if a corrective reading program is to be implemented.

It is the writer's contention that it is not necessary for each teacher to become a diagnostician in the traditional sense of the word. Instead, teachers can become proficient in diagnosis if they would change their conception of "diagnosis" in terms of how it may be conducted and how results may be utilized.

The focus and intent of diagnosis, especially in corrective reading endeavours, should be to determine the student's strengths and weaknesses and to use the insights gained as a basis for the instruction needed to correct the disability. In light of this, Otto (1973) and Harris

and Sipay (1975) suggest the following framework for diagnosis:

- (1) Decide exactly what information is desired and what this means in terms of observable behaviour.
- (2) Devise new or adapt existing material or situations to sample the behaviour to be evaluated.
- (3) Keep a record of the behaviour evoked in the test situation.
- (4) Analyze the obtained information.
- (5) Make judgments as to how the information fits the total picture and how well it fills the gap for which it was intended.

Thomas and Robinson (1982) suggest a similar approach when they outline the following steps for diagnosis:

- (1) Learn, often through observation, which skills the students already have.
- (2) Examine the assignment to learn what skills students must acquire in order to complete it.
- (3) Tie in instruction in the skills in which students are deficient, thereby removing roadblocks.

Critics may suggest that such an approach to diagnosis is too vague and time-consuming. They often view diagnosis as the administration of a standardized test to generate a grade equivalent or percentile ~~score~~.

However, the diagnosis of reading involves considerably more than the collection of scores on reading tests. Diagnosis involves arriving at judgments about the degree to which the needs of the disabled reader are being met.

This is not to say that standardized testing not be used. However, it is suggested that such tests be used with caution and a realistic understanding of what they can accomplish. Robinson (1978) contends that standardized tests do not permit adequate evaluation of a student's reading ability; especially one who is experiencing difficulty in the upper school grades. Instructional level performance of students is not adequately reflected by such tests and most often it is the frustration level which is indicated.

Dechant (1981) suggests that standardized tests indicate how one student differs from another but not how the student differs within himself with respect to his reading strengths and weaknesses. In order to be effective, corrective instructional decisions must be based on an analysis of the performance differential within the student and not solely on differences among students.

In the final analysis, the teacher who knows his subject matter and knows how children learn can probably get more pertinent information concerning a particular student from the informal assessment and error analysis that he does in the classroom than he can from a battery

of formal tests. Ramsey (1971) suggests that the classroom teacher is the primary factor in any situation designed to determine students' reading disabilities. Similarly, Robinson (1978) contends that it is the teacher who is the most important tool for classroom evaluation of readers. He suggests that the various informal procedures which can be utilized continuously throughout the school year are far more functional than a single administration of a standardized test to determine students' reading needs.

The following are suggested informal diagnostic procedures that may be of benefit to the classroom teacher:

Observation

One of the more important methods of assessing a student's reading behaviour is through informal teacher observation. The classroom teacher has the best opportunity to observe students' strengths and weaknesses on a day-by-day basis and can respond immediately to concerns that may arise. Strang (1968) recognizes the crucial importance of observation when she encourages teachers to be "child watchers". Similarly, Goodman (1978), who refers to it as "kid watching", strongly recommends observation of this type. Students can be observed on many occasions during the day: during testing

sessions, teaching lessons, free time, group activities, and independent work periods.

It is helpful to have a systematic method of recording significant student behaviors. The periodic use of checklists allows the teacher to note behaviors such as: lateral head movements, finger pointing, tension signs, concentration difficulties, fluency, and phrasing abilities as individual students read. While checklists vary in their content, Cheek and Cheek (1980) suggest some standard items that a reading checklist might be expected to include:

- Rate of reading assignments
- Understanding of material read
- Skill in oral reading
- Classroom participation and discussion
- Desire to read assigned or other material
- Types of material read during leisure time
- Skill in responding to various types of questions
- Ability to recognize new words
- Variety of vocabulary used

Observation procedures are useful in evaluating progress in reading, providing insights into reading problems, and yielding information about how reading performance might possibly be improved.

Student Interview

With more mature students, one of the best sources of information is the student interview. The one-to-one relationship in an interview encourages the free expression of the frustration and difficulties a student

may be encountering in the reading process. Déchant (1981) indicates that the interview should cover topics such as personal interests, study and reading habits, subjects liked and disliked in school, homework, kinds of books read, and activities at home, in school, and away from home. Such information can provide the teacher with insight on ways of adjusting or adapting instruction to better meet the student's needs.

Autobiography

A practical procedure to use to learn more about a student is the reading autobiography. This may be done in written form or orally, depending upon the student's preference or skills. Cheek and Cheek (1980) suggest that the teacher may use a checklist form of autobiography which can be easily written and evaluated. Caution should be exercised however, because this approach does not allow for open expression of feelings, since it places constraints on students' responses. It is suggested that it would be more meaningful to provide students with leading questions and ask them to write about their feelings towards reading. Some typical leading questions might include:

- (1) How do you feel when you have to read?
- (2) What do you think when your teacher says it's time for reading?
- (3) What is your least favorite subject in school? Why?
- (4) When did you read your first book? How did you feel?
- (5) What do you like most (or least) about reading?

(Cheek & Cheek, 1980, p. 76)

The "reading autobiography" gives the student the opportunity to express his feelings about reading and may give the teacher indications as to what direction needs to be taken with a particular student.

Interest Inventory

While it may be possible to improve students' reading abilities without meeting their interests, it is much easier to motivate them to read when their interests are considered. What the student reads and how much is read are both dependent upon student interest. Furthermore, there is a direct relationship of interest to reading comprehension (Asher, Hymel and Wigfield cited in Dechant, 1981). If reading diagnosis is to lead to improved reading and to more reading by the student, then it is important to understand student interests. One way of accomplishing this is by administering a teacher-made interest inventory. A sample follows:

Interest Inventory

1. Do you like to read? _____
2. How much do you like to read? A little _____
A lot _____ Not at all _____
3. What is the best book you ever read? _____
4. What other books have you liked? _____
5. What do you usually do after school? _____
6. What do you like to do best of all? _____
7. Do you have any pets? _____
8. What games or sports do you like? _____
9. What things do you collect? _____
10. What are your hobbies? _____
11. If you could have one wish that might come true, what would it be? _____
12. What is your favorite TV program? _____
13. What others do you watch? _____
14. Do you have any books of your own? How many? _____
15. Do you go to the library? How often? _____
16. Do you read comic books? _____
17. What is your favorite comic book? _____
18. Do you read comic strips in newspapers? _____
19. What magazines do you read? _____
20. What newspapers do you read? _____
21. What kind of work do you want to do when you finish school? _____
22. What school subjects do you like the best? The least? _____
23. What kind of books do you like best?

Animal stories _____	Humour _____
Mystery stories _____	Romance _____
Science fiction _____	Sports _____
Home and family life _____	History _____
Problems of growing up _____	Other _____
24. How many hours a day do you:
 (a) watch TV? _____
 (b) listen to radio? _____
 (c) listen to records and tapes _____

(Dèchant, 1981, p. 51)

In order to help a student overcome reading problems or to prevent the development of problems, the teacher must be aware of and use materials appropriate to the student's interest. The teacher should know his students and try to use their interests as a guide in instruction.

Retelling Technique

Having a student retell a story is a useful technique for assessing the student's comprehension. In effect, the student becomes an author. Richek, List, and Lerner (1983) suggest that through retelling, the teacher can determine various facets of reader's abilities: the information from the text the reader considers important, the scheme or concepts he brings to the text, his ability to integrate new information with old, and his ability to present information in an organized fashion.

The student is instructed to read the selected story silently, because in this way he will be telling the story to the teacher who (presumably) does not already know it. After the story is read, the student retells it without interruption from the teacher. When finished, the teacher may probe the retelling with questions for clarification of information. The teacher can organize the student's retelling in terms of: characters and their characteristics, story events, overall comprehension of plot and theme of the story.

Diagnostic Teaching

Diagnostic teaching is an extension of the assessment process in that the teacher continues to collect diagnostic information while teaching the student. The teacher can gain additional information about the student

by developing lessons that teach and test simultaneously and by noting the student's reaction to these lessons. Diagnostic teaching is also referred to as "trial lessons" or "task analysis" (Harris and Sipay, 1975; Lerner, 1981; Gillespie and Johnson, 1974). The essence of diagnostic teaching is a situation in which the student's behaviour as a learner can be carefully observed and evaluated. It is a teaching session designed for assessment rather than solely for teaching, and, as such, results can yield reactions that provide valuable diagnostic clues about the student's learning styles.

Cloze Procedure

An important and versatile informal procedure for use by elementary and secondary classroom teachers in determining student's reading levels and in discovering the possible causes of reading problems is the cloze procedure. A cloze test can be developed without special training in its construction. To develop a cloze test the teacher gathers reading selections from graded textbooks, basal readers, or any other material that is appropriate and unfamiliar to the students. Richek, List, and Lerner (1983) outline the procedure as follows:

1. Choose at random two or more samples from each selection of graded material to be included using the following criteria:
 - (a) Begin at the beginning of the paragraph

- (b) Use a continuous context
- (c) Select passages containing at least 250 words.

2. Delete every fifth word and replace the words with underlined blanks of uniform length.
3. Duplicate the paragraphs and present them to the students. Instruct them to write the word that they think is appropriate in each blank.
4. Score responses as correct when they exactly match the deleted words, disregarding minor spelling errors. Use a percentage score of correct responses to determine the students' reading level.

Cloze Score

Reading Level

44% to 57%

Instructional Level

58% to 100%

Independent Level

Sample Cloze Selection

Often when people go _____ the movies, they find _____ a taller person is _____ in front of them. _____, they can't see over _____ person's head. If this _____ to a child, who _____ grown to full height, _____ or she may take _____ in the fact that _____ day they may be _____ tall adult. But for _____, who will grow no _____, the frustration of only _____ able to see half _____ screen is permanent.

(Answers: to, that, sitting, sometimes, the, happens, hasn't, he, comfort, one, a, adults, taller, being, the).

(Richek, List, and Lerner, 1983, pp. 137-138)

The cloze procedures' primary purpose is to provide an indication of the student's reading level, but it can also be used to gain more diagnostic information through alternative interpretation. An analysis of student

answers can serve to evaluate the student's comprehension ability, use of context clues, and vocabulary development. For example, if the student fills in the blanks with totally irrelevant words, it is very likely that the material is not understood. This is a valuable clue for the teacher to use in evaluating the student's ability to comprehend certain materials. More diagnostic information can be gathered by examining the types of words substituted in the blanks to determine whether or not the student uses context clues adequately. In addition, to assess the extent of the student's vocabulary, students may be asked to list as many words as they can think of that could complete each blank. Students with limited vocabularies will encounter difficulty in completing the assignment, indicating to the teacher their need for further vocabulary study to understand the material. The cloze procedure is a good diagnostic tool for use in content material from the elementary grades through high school, since it can be administered to entire groups of students, thereby minimizing the loss of teaching time in diagnosis and maximizing the amount of information gained from an instrument.

Informal Reading Inventory (IRI)

One of the more useful diagnostic procedures is the administration of the informal reading inventory as

evidenced by its wide use as a diagnostic tool in many schools. The IRI is especially useful in implementing a corrective reading program, since it is a relatively quick method of ascertaining whether or not students are ready to handle the specific content material intended for instruction (Lamberg and Lamb, 1980).

The informal reading inventory was first suggested by Betts (1957), because of inadequacies of existing reading tests. He suggested that the scores on these tests did not give enough information for a comprehension reading diagnosis, nor did they permit the teacher to observe the student reading the types of reading materials used in the classroom.

An IRI is a compilation of a series of graded reading passages ranging from the pre-primer level to the twelfth grade. In other words, each passage is written at a level of difficulty which corresponds to the equivalent grade level of reading. A readability formula, such as the one developed by Fry (1972), can be used to substantiate grade level. Each passage is generally accompanied by a set of 5 to 10 comprehension questions. Typically the questions measure literal, inferential, and sometimes critical aspects of comprehension. At any rate there should be questions relating to each of the various reading skills, such as understanding details, the main idea, sequence of events, cause-effect relationships, comparisons and

contrasts, mood, author's opinion, and inference (Cheek and Cheek, 1980, pp. 58-61).

Rather than giving a standardized single grade equivalent score, informal reading inventories indicate three different reading levels: the independent, the instructional, and the frustration reading levels. The independent reading level is the highest level at which a student can read fluently with few word-recognition errors and with good comprehension. It is usually about one year below the instructional level. The type of material that the student can read at this independent level normally comprises the student's free-time reading fare. At the instructional level, word-recognition and comprehension are generally satisfactory, but the student needs the teacher's help. It is the level at which systematic instruction can be initiated and can be best applied to upgrade the student's reading competency. It is the "teachable level". On this level, instructional guidance is needed for best performance. The material is difficult enough to require instruction, but easy enough so as not to be frustrating. At the frustration level, the student's reading is full of word-recognition and comprehension errors, fluency disappears and the student shows signs of frustration, tension, and discomfort. The material is too difficult to encourage growth, and the student is simply not ready for the material at this level (Betts, 1957).

Specific criteria for determining the student's independent, instructional, and frustration levels in reading have been debated for several years, but the question of which criteria are most accurate remains moot. The most commonly used criteria are those provided by Betts in 1957. The latest research regarding criteria would appear to have been done by Powell (1978). Teachers should be aware of this discrepancy and be consistent in the use of selected criteria. The specific criteria given by both Betts and Powell for each of the three reading levels are listed below:

	<u>Powell</u>		<u>Betts</u>	
	Word Recognition Comp.		Word Recognition Comp.	
Independent	97%+	91%+	99%+	90%+
Instructional	94%+	65%-90%	95%+	75%+
Frustration	93% or less	64% or less	90% or less	50% or less

The informal reading inventory helps determine specific strengths and weaknesses in reading. In terms of a corrective reading program, it deals with the question, "How well does the student read?". It helps match reading materials to the student, and helps identify materials that fit the student's level of reading ability.

There are many variations on the IRI. The type selected depends upon the depth of the diagnostic information desired and the theoretical framework of the examiner. Because the test is informal, the teacher can make adaptations to meet changing purposes and needs.

One such variation of the IRI is proposed by Tonjes and Zintz (1981). They suggest a "Content IRI" as an alternative to the standard or traditional informal reading inventory. Such an approach to reading diagnosis has a number of pertinent implications for corrective reading in the content areas.

The Content IRI is prepared by the content teacher using the text for that class. It can be administered to an entire class simultaneously during one class period and reflects directly the area being studied and the type of questions the teacher considers to be important. The major purpose of the Content IRI is to determine how well the individual students in a particular class are able to deal with that text and ascertain what skills still need to be given extra practice.

Tonjes and Zintz (1981) outline the following steps to develop a Content IRI:

Part I

This section of the Content IRI attempts to determine the suitability or the fit between the students and their texts. This part should not take the students longer than twenty minutes to complete.

(1) Select from near the beginning of the text a representative sample of approximately 250-400 words.

(2) The selection may be typed or students can be asked to read it directly from the text.

(3) Compare an introductory motivation paragraph that includes a general statement about the topic to be

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read. In other words, the paragraph supplies a frame of reference and a statement telling the purpose for reading it.

(4) Prepare ten or more comprehension questions that include several vocabulary definitions, literal facts, and inferential questions. Vocabulary terms should always be used in context, not isolation.

(5) When a rough draft of the question is completed (at least three in each category), evaluate each according to the following:

- (a) Vocabulary - Did you select key terms important for your students to know? Did you use them in context?
- (b) Fact - Were the details you asked students to recall clearly stated in the selection?
- (c) Inference - Did these questions relate the topics to their background of experience?

Part II:

Part II of a Content IRI consists of a needs assessment of selected skills. The teacher is considered the best judge of those skills necessary for his students to master to meet with success in a particular class. To construct the first section of Part II Tonjes and Zintz (1981) suggest that three skill areas from those listed below should be selected for assessment.

- (a) Use parts of text - Are they efficient in using textbook aids such as the table of contents, index, appendices, glossary, references?

(b) Locate reference materials - Can they locate and use information in encyclopedias, almanacs, reader's guides, and other reference materials?

(c) Outline and notetake - Are they able to outline information and take notes from reading references or listening to lectures?

(d) Interpret graphics - Do they know how to interpret maps, charts, diagrams, tables, graphs, and cartoons?

(e) Follow directions - Are they able to follow directions correctly and efficiently?

(f) Translate symbols or formulas - Do they know the meaning of specific symbols or formulas needed for your subject?

(g) Define content-specific vocabulary - Do they recognize with understanding the special vocabulary of your area?

(h) Display comprehension skills - Are they able to note main ideas, supporting details, sequence of events, conclusions, cause and effect?

(i) Use study strategies - Do they know and use appropriate study skills and strategies?

(j) Adapt rate - Do they adapt their rate of reading to the purpose and difficulty of the material?

Once the teacher selects three areas considered important, the first section of Part II is completed. The second section of Part II is to construct test questions

based on the text or other class material that will determine students' strengths and weaknesses in the skill areas selected. Examples of questions from each skill area are given below:

(a) Parts of Text - On what pages will you find information about ____? When was this text copyrighted? On what page will you find a table or figure on the topic of ____?

(b) Reference Materials - Where would you look for information about ____? What kinds of information would you find in an almanac?

(c) Outline and Notetaking - Ask students to outline a passage in the text, or dictate a short passage and ask them to take notes.

(d) Graphics - What is the topic of this diagram? What does the symbol _____ mean here? What is one conclusion you can draw from this chart?

(e) Following Directions - Select a segment of reading or test material you use, and ask students to follow the directions as written.

(f) Symbols and Formulas - What do the following symbols mean? What is meant by the formula $A = 1/2bxh$?

(g) Content-Specific Vocabulary - Match the words with definitions by writing the correct letter from the column on the right next to the number on the left:

- (1) _____ simile
 (2) _____ metaphor

- (a) two unlike things compared using the words "like" or "as".
 (b) words of opposite meaning used together.
 (c) a direct comparison between two things.

(h) Comprehension Skills - What is the main idea of the paragraph? What conclusion can you draw from this statement? Determine which was the effect and which was the cause. List the events in the order which they occurred.

(i) Study Strategies - Administer a study habits survey asking students how often they do such things as the following:

- Survey the chapter first.
- Ask questions as they are reading.
- Check their answers as they read.
- Review immediately after reading.
- Schedule their time for study.

(j) Adaptable Rate - Short paragraphs may be typed up and students asked to read each for a different purpose. They mark whether they intend to read it very rapidly, very slowly, or somewhere in between.

The Content IRI should ideally be administered to the total class at the beginning of the term. When introducing the Content IRI to the class, the teacher should indicate that it is not a test but simply an inventory of their strengths and weaknesses.

To score this inventory the teacher should develop his own criteria. The teacher may decide in one skill area it is necessary to get four out of five items correct

to demonstrate skill competency. Perhaps in another area, ninety-five percent correct might be deemed necessary. Regardless of the criteria used, it will be helpful to construct a class chart showing general areas of the class's strengths and needs as well as individual strength and weaknesses (Tonjes and Zintz, 1981, pp. 82-86).

The discussion of informal diagnostic procedures presented in the preceding pages is not intended to be an exhaustive summary of all the diagnostic instruments available to the teacher. However, each of the informal diagnostic procedures alluded to can contribute to a better understanding of the students' capabilities. Used properly, the information obtained allows for a more adequate assessment of the students' strengths and difficulties and facilitates the effectiveness of the corrective reading program.

Readability

An important aspect of a corrective reading program, in addition to diagnosis of student needs, is the readability of instructional materials intended for use with disabled readers. Diagnosis, as discussed in the context of this paper, is based on the assumption that learning to read is dependent on the peculiarities of the individual student's strengths and weaknesses. However, instructional strategies should not rely solely on the

diagnosed needs of individual readers. An effective corrective reading program will also need to consider the instructional materials employed to assist the disabled reader become proficient in reading.

A practical tool for the classroom teacher involved in corrective reading is a readability formula that estimates quickly the approximate difficulty level of print materials. Readability formula scores are used to determine the grade-level suitability of many different materials ranging from library books to content area instruction materials.

If numbers prove anything, readability formulas seem to be gaining in popularity. Wheeler and Sheman (1983) state that there are now over thirty formulas to help us determine how hard it will be for students to read a given text. While this fact may suggest progress in education, a closer look shows that the number of readability formulas can lead to confusion rather than enlightenment. Lamberg and Lamb (1980) suggest that the formulas differ in: (1) the kind and number of variables they measure; (2) the degree of difficulty and the amount of time required to use them; (3) the computational procedures; and (4) the grade levels of material they are designed to measure.

Most of the readability formulas in common use today measure only two language elements - vocabulary and sentence difficulty. Vocabulary measures can be: word

length in letters or number of syllables, word familiarity, or word difficulty. Sentence difficulty is usually determined by its length. No matter which formula is used the teacher must be cognizant of the fact the results are only approximations of difficulty. The teacher's experience and professional judgement as to the concepts, purpose, and student's interests are also critical factors to be considered (Tonjes and Zintz, 1981).

In any event, it is probably only necessary to become familiar with one or two readability formulas to have available a useful tool to ascertain the approximate difficulty levels of instructional materials. One of the most widely-used formulas is the Fry (1972) graph for estimating readability. The instructions for applying the Fry readability formula are given below:

1. Randomly select three sample passages and count out exactly one hundred words each, beginning with the beginning of a sentence.
2. Count the number of sentences in each one hundred word sample, estimating the length of the fraction of the last sentence to the nearest one tenth.
3. Count the number of syllables in each one hundred word sample. (It is convenient to count every syllable over one in each word and add one hundred.)

4. Plot the point on the Fry Readability Graph where the average sentence length and the average number of syllables intersect. The area where the dot is plotted will give you the approximate grade level.
5. If a great deal of variability is found in syllable count or sentence count, putting more samples into the average is desirable.

Example:

	Sentences per 100 words	Syllables per 100 words
100-word sample page 5	9.1	122
100-word sample page 89	8.5	140
100-word sample page 150	7.0	129
Divide total by 3	3)24.6	3)391
Average	8.2	130

(Plot the intersection of the average number of sentences (8.2) and the average number of syllables (130) on the Fry graph to determine the approximate grade level of the material.)

(Fry, 1972, pp. 231-232)

Another useful instrument often used for assessing readability is McLaughlin's (1969) SMOG formula. The SMOG formula uses traditional measures of difficulty - word length and sentence length. McLaughlin, however, uses a thirty-sentence criterion rather than the one hundred word criterion of the Fry formula. The McLaughlin SMOG formula is as follows:

$$\text{SMOG} = 3 + \sqrt{\frac{\text{Number of words with three or more syllables in thirty sentences}}{10}}$$

The readability formula is based on the interrelationship of sentences length and number of polysyllabic words. Words containing more syllables are considered to be more difficult than short words. Three ten-sentence samples are selected and the number of polysyllabic words are determined. Since short sentences may have less opportunity to include large words, the difficulty level may be determined by the number of polysyllabic words in three sentence samples (Tonjes and Zintz, 1981).

The steps to the SMOG Formula are:

1. Count ten consecutive sentences near the beginning of the text, ten near the middle and ten towards the end.
2. Taking the total thirty sentences, count every word of three or more syllables when they are read aloud. Count words of three or more syllables, even when they are repeated.
3. Estimate to the nearest perfect square - the square root of the total number of polysyllable words. (For example, if the total was twenty-four, the nearest perfect square would be twenty-five and the square root of twenty-five is five.)
4. Add three to the estimated square root to determine the reading level. (In this case when the square root is five, add three and the readability level will be eight).
5. When samples of the three ten-sentence selections vary considerably, further samples should be selected for greater accuracy.

(Tonjes and Zintz, 1981, p. 62)

However, the Fry and SMOG readability formulas may not agree if the teacher applies them both to the same selected instructional material. It is important to understand how to interpret this difference. Fry's graph estimates the reading ability needed to comprehend with fifty to seventy-five percent accuracy, or somewhere between the frustration and instructional reading levels, whereas SMOG predicts reading ability required by ninety to one hundred percent understanding, or the independent level. Hence, a Fry score of eight means that students reading at an eight grade level can handle the material if given instructional aid. A SMOG score of eight means that students reading at an eight grade level could handle the material independently, possibly as homework (Tonjes and Zintz, 1981).

In order for a corrective reading program to be effective the teacher must be concerned about all situations that may arise in the regular classroom where the disabled reader encounters print. It is sometimes important, therefore, to be able to determine the readability level of passages shorter than one hundred words, such as those found in math text, directions, and essay questions. Forgan and Mangrum (1976) have outlined procedures for doing this using the Fry readability graph:

1. Count the total number of words in the passage.
(For example, the total might be sixty-nine words.)
2. Round down to the nearest ten. (In this case the teacher would round down the sixty-nine words to sixty.)
3. Use this number (in this case sixty) when counting the number of sentences and syllables.
4. Multiply the number of sentences and the number of syllables by the corresponding number found in the conversion chart below. With the example of a sixty-nine word passage, rounded down to sixty, the teacher would multiply the number of sentences by 1.67 and then the number of syllables by 1.67.

Chart for Evaluating Reading Difficulty of Short Passages

# of words in Selections, (less than 100)	Multiply by
30	3.3
40	2.5
50	2.0
60	1.67
70	1.43
80	1.25
90	1.1

5. Use these numbers to plot Fry's graph to find your readability estimate.

Such knowledge may be useful to the classroom teacher when writing test questions, study guides, directions or explanations for students.

Limitations of Readability Formulas

One cannot ignore the need to address the value and use of readability formulas as indicators of the difficulty level of instructional materials. Educators tend to agree that the approximations of grade level obtained from readability formulas are indeed useful. They are relatively quick and easy to use and research has shown that they generally agree in the ranking of materials as to difficulty (Lamberg and Lamb, 1980).

However, critics are quick to point out the obvious methodological inadequacy in generalizing from limited data. The difficulty level of instructional material is generalized on the basis of the difficulty level of a few passages. In turn, the difficulty of each passage is generalized from measures of two or more variables (Lamberg and Lamb, 1980).

Most authorities would agree that reading involves interaction between the reader and the text. In fact, research (Johnson, 1983) supports the common wisdom that readers use their knowledge and experience during the comprehension process. Readability formulas, being strictly text based, do not address the interactive nature of the reading process. Popular formulas employ only a syntactic (sentence length) and a semantic factor (vocabulary diversity) and do not directly address factors related to the communication of meaning (Rush, 1985). As Dreyer (1984) notes, formulas cannot discriminate between

written discourse and nonsensical word combinations. Moreover, readability formulas cannot assess a reader's interest, experience, knowledge, and motivation.

Davidson (1984) observes that readability formulas may be misused on instructional materials because they often predict that materials will be too difficult for given grade levels. Science, social studies, and other subjects employ specialized vocabulary, which artificially increases the number of "hard" words, thus inflating readability scores. However, teachers should always keep in mind that instruction moderates this vocabulary burden in content area reading, and that technical words should be taught during content lessons. Once taught, these words need not be considered "hard".

To select the best materials, classroom teachers need to go beyond readability scores without ignoring them. Teachers should be aware that these scores are only guideposts or clues to actual reading difficulty. Wheeler and Sheman (1983, p. 40) suggest that teachers: check the organization and content of text chapters by preparing an outline; look for the presence of graphic aids such as pictures, maps, charts, and graphs which increase readability; determine that technical vocabulary is identified with bold print or some other technique to draw the student's attention to it; and finally, elicit some student reaction to the text. The best test for any instructional material may be to give it tentative use.

Student judgement and reaction are very valuable in the selection process but are often overlooked.

All methods of readability analysis must be used knowledgeably and interpreted cautiously. To paraphrase Rush (1985, p. 282) users of readability formulas should:

1. realize that different formulas produce variant scores for the same passage;
2. consider formulas to be screening devices;
3. take large random samples of text to be evaluated;
4. recognize that for materials intended for higher grades where content is important, formulas are poorer predictors;
5. consider the effect of motivation and prior knowledge on comprehension;
6. not rely on formulas alone but include their own professional judgments.

Perhaps most useful to the teacher who intends to employ corrective reading procedures in his classroom is Robinson's (1978) list of readability criteria for instructional materials. Robinson suggests that teachers should ensure:

1. The density of concepts doesn't frustrate the reader.
2. The sentence complexity isn't unusually high, utilizing long compound and complex sentences.

3. The authors don't choose to use difficult words when simpler synonyms would suffice.
4. Captions under graphs and diagrams are clearly written.
5. The text contains both a table of contents and an index.
6. The table of contents shows a logical development of the subject matter.
7. If a text refers to a graph or diagram, that aid is on the same page as the textual reference.
8. Difficult new vocabulary are highlighted or underlined.
9. Pictures are in color and are contemporary.
10. The main idea or purpose for reading a chapter is stated at the beginning of the chapter.
11. A summary is included at the end of each chapter.
12. Antecedents and referents are clear, particularly across sentences.
13. Relative clauses are limited in a given sentence, clearly written and clearly attached to a referent.
14. The variety of connectives is controlled so that they are used sparingly as important signals to the reader.

15. Passive tense is used only when essential, since its frequent use may cause trouble for poor readers.

The various strategies discussed here are at best approximations of readability and are not intended to be hard and fast limits. In the final analysis, it is probably best for educators who use readability formulas to be cognizant of their limitations and to supplement the approximations derived from them with knowledge of the individual reader's needs and meaning related text characteristics to plan successful reading experiences. Successful reading requires a proper "fit" between a reader and the printed page. Diagnosing the individual student's needs in conjunction with an analysis of the readability of instructional materials are vital components of a successful corrective reading program.

CHAPTER 4

QUESTIONING STRATEGIES

Why do students in upper elementary and secondary grades encounter difficulties with reading comprehension, in particular with content area comprehension? As previously mentioned, these are the grade levels in which most of our disabled readers tend to materialize. This in itself is a significant and critical factor which has often been overlooked in our haste to help the disabled readers in our schools. Rather than be tempted to borrow solutions from other areas of the school curriculum to alleviate the problem, we should remember that effective solutions are those which expressly apply to particular problems.

It is the writer's contention that the comprehension difficulties which many of our disabled readers encounter may lie specifically in the expository and technical nature of the content instructional materials used. Classroom teachers generally become frustrated when their students are unable to achieve success while reading content materials and often suggest that had the students been exposed to better reading instruction in earlier grades, they would perform much better and meet adequately the demands of the various subject areas. It does seem reasonable to think that instruction at the elementary level should prepare students for the reading required in

content classes. However, certain factors qualify this position. At the primary levels students are taught basic reading skills principally through the use of narrative materials and this practice extends itself through the elementary grades. Even though students may be required to read expository material in subjects other than reading, they are not taught how to handle this material as well as they are taught to deal with narrative materials. Yet students at the upper grades are required to read increasingly complex and abstract exposition, and teachers assume they are equipped to do so (Herber, 1978).

We must recognize and accept the fact that, beyond elementary school, textbooks and instructional materials are not simply complex, diverse variations of narrative literature. Hence, the inherent comprehension difficulties of disabled readers may not so much be caused by an inability to cope with gradual increase in the degree of difficulty of comprehension tasks, but instead may be caused by the difference in the kind of comprehension required by content materials.

The writer contends that even where the elementary reading programs are of high quality and attempts are made to provide a transition, students need continued instruction to learn to adopt skills to the more demanding content materials. In addition, it must be kept in mind that not only the level of abstraction in content materials but also the technical language becomes more

complex at each successive grade level. Success achieved at one grade level with a subject does not guarantee the same at another. Students must be taught how to read the material at each successive level. Just as all students have been taught how to comprehend the contents of narrative literature, so must they be taught how to comprehend the contents of expository literature. Good teaching, whether corrective or developmental in nature, requires that all students be taught to organize their thinking before, during, and after text reading; and to apply the skills learned in subsequent independent reading of content material (Gilstad, 1982).

Given that as students progress through the intermediate and secondary school years they are required to read more expository-type material, the ability to comprehend expository writing assumes a position of crucial importance for success in schools (Hahn, 1985). The obvious suggestion that teachers need to provide more direct instruction in comprehension becomes especially critical for the disabled reader who must now contend with expository prose. For the classroom teacher, the issue to be resolved is this: What strategies should be incorporated into an already overcrowded curriculum that will have high utility and transferability for the disabled reader who is reading expository text?

The writer suggests that of all teaching methods, none is more potentially powerful than questioning in the

teaching of comprehension in the content areas. Socrates (469-399 B.C.) was perhaps the first to point out that a questioner is a midwife who brings ideas to birth. He himself was a great proponent of this "art of intellectual midwifery" (Chaudhari, 1975). In modern times too, questions are regarded as an important method of developing comprehension and thinking in learners. Bruner (1960) maintains that one of the most important rewards of learning is the learner's ability to use the knowledge acquired to further his own thought. Bridging the gap between learning and thinking is a difficult process for some children and, as such, questions are probably the best means of providing assistance to the learner as he tries to invent systems for handling text data more efficiently.

Questioning is considered by many as the most common technique of teaching practiced in classrooms; indeed, effective questions are often equated with effective teaching. Griesse (1977, p. 38) suggests "questioning is the starting point in the development of comprehension". Aulls (1978, p. 3) contends that "questions are the stock of the teaching profession". Similarly, Dean (1986, p. 184) indicates that "owing to their purpose questions have always been viewed as the core of effective teaching". Galt's (1970) often quoted "To know how to question is to know how to teach", and Farrar's (1986, p. 98) "it is impossible to conceive of teaching without asking

questions" are further statements which exemplify the notion that questions are a predominant and beneficial teaching technique.

Hence, there is no doubt that questions are one of the most prominent forms of comprehension instruction used by teachers. Questions are used to activate students' memory processors of text, focus their attention on significant aspects of text material, and aid them in synthesizing seemingly different parts of text into a coherent whole. It may be fairly safe to say that those teachers who are good questioners are those who promote the process of comprehension.

How Questioning Has Been Utilized in the Classroom

How has questioning been used in the past to promote comprehension? In attempting to answer this question it may be beneficial to review several studies of teachers' comprehension instructional practices in the classroom. Durkin (1983), in a year-long study of reading and social studies classrooms, found that practically no comprehension instruction took place. Questioning was primarily concerned with comprehension assessment. Whether children's answers were right or wrong was the main concern of teachers. Guszak (1983) concluded his observations of teacher questioning strategies with the following remark:

About the only thing that appears to be programmed into the students is the nearly flawless ability to anticipate the trivial nature of the teacher's literal questions ... the students have learned well to parrot back on endless recollection of trivia. (p. 269)

Hall, Ribovich and Ramig (1979) suggest teacher questioning has not always produced benefits. The tendency has been to overdo the questioning to the point that interrogation supplants true discussion. Responses often are not probed and extended. Farrar (1986) in a review of questioning research concurs on this point and also reports that teachers use fact questions more than any other kind. Guszak (1978) provides a general summary of what studies of teacher questioning in the classroom have revealed.

- (1) Teachers do most of the talking, nearly all the questioning, and most of the verbal evaluating of student responses. Such domination may preclude a great deal of student thinking.
- (2) Students anticipate the nature of comprehension questions rather well, as most are answered correctly on the first try. This may not be surprising in light of the fact that most questions are literal in nature and that only a few students do most of the answering.
- (3) Evaluative types of questions make up approximately 15 percent of teachers' questions. However, evaluative questions most often ask students whether they simply like or dislike, agree or disagree with certain elements of the text.

- (4) Organizational questions are seldom asked. Hence it is easy to make inferences about why students encounter difficulty in summarizing, outlining, and the like.

(Guszk, 1978, p. 231)

The writer suggests that the findings of research should not be viewed as an indictment of teachers. Educators generally agree that it represents but a set of observations based on what is admittedly limited research (Guszk, 1978). Nevertheless, the information seems suggestive of actions that can and should be taken. We should perhaps focus on the observed outcomes of the mental behavior of students involved in comprehension tasks. If we clearly describe the behavioral outcomes that seem to be important for comprehension of content materials, perhaps then we can devise appropriate questioning strategies for obtaining them.

Effective questioning is not an innate talent that only a few teachers possess; it is a skill that can be developed with practice. It is one of the teacher's basic tools of communication and it can provide a powerful and direct means of preparing students to learn how to think about the content material they read. It is not the amount of questioning that makes the difference, but the method of asking and using questions to foster reading comprehension. As Socrates said, "A good question is half the answer" (Aulls, 1978).

The effective teacher recognizes that questions per se have no inherent value. In any teaching situation, questions can be used most unimaginatively. The efficacy of questioning lies in the interaction which may take place between teacher and student as together they explore the meaning of what is being taught and learned. The artful teacher initiates and sustains the kind of thoughtful discourse that helps students ruminate and organize ideas (Heilman, 1972).

How Questioning Can Be Utilized in the Classroom

Many teachers believe the function of questioning is to test students' knowledge, often at the end of a chapter or unit of work. Questions are useful for evaluating students' understandings, but while evaluation is a valid use of questions, it is not the only or primary use. Essentially, questions are tools by which students can process information they hear, read, or experience. They are integral components of the academic and thinking skills. Questions engage students' minds and stimulate active learning. The effective teacher who uses well-formulated questions helps students realize that their role in learning is not a passive one, but one of participation. The quality of the classroom dynamics depends greatly upon the level, frequency and

appropriateness of questions. Hunkins, Jeter, and Maxey (1982) suggest:

Teachers who effectively utilize questioning realize the power of their technique for getting students to comprehend more completely....Armed with skills in questioning pupils can increase their learning autonomy and augment their understanding. (p. 254)

Questions help orient students to a particular lesson or unit, guide investigation, and enable one to judge the value of a reading effort. The students gain not only an increased knowledge and understanding of the subject matter under consideration, but an effective orientation to reality as well. Tonjes and Zintz (1981) contend that we show students what we consider important by the types of questions we ask; and we manipulate the learning environment by the types of questions that we choose, by which type we ask students, and by the timing and manner of our questioning.

In addition, Olsen and Dillner (1982) indicate that good questions can identify students in need of specific skill instruction, provide a means for teaching particular skills, and reinforce skills already known. Such a strategy has pertinent implications for its utilization in a corrective reading program.

Most reading authorities regard meaningful, purposeful reading as a major factor in promoting comprehension. The ability of the reader to establish a purpose when reading sets the limits for completing the task efficiently. Heilman, Blair, and Rupley (1981)

suggest that a major vehicle for teachers to utilize in fostering growth in purposeful reading is the proper framing of classroom questions in relation to the desired reading comprehension outcome. Appropriate questions prior to reading help students engage themselves in learning, direct their purposes for reading, and regulate their depth and rate of reading.

Although a continuing goal of the teacher should be to help students learn to set their own purposes for reading by creating their own questions, some caution should be exercised in this regard. The teacher, especially one involved in corrective reading, must learn to program questions that will guide readers into high-level thinking processes only as they are able to do so, and in light of the specified reading purposes. Smith and Robinson (1980) point out that the use of inappropriate questions or the use of questions when they cannot be coped with by the learner may defeat the very purpose for which they are intended - to develop comprehension. As Herber (1978) states, "to be able to answer questions, one must be able to apply the reading skill or skills implicit in the relationship between the question and the content" (p. 193).

Most higher-level thinking questions rest solidly upon a basis of factual information. As teachers plan guiding questions to accompany assigned reading, they may want to devise questions to help students pull out the

underlying facts by utilizing skills such as main idea, details, sequence, cause and effect, and inference. With these at their command, students should be better prepared to proceed to depth questions - those that require them to grasp implications, draw conclusions, make generalizations, and arrive at evaluations (Thomas and Robinson, 1982).

Even though the types of comprehension are often listed separately, they do not function independently. Rather, they are interdependent and overlapping. Moreover, as previously stated, it cannot be assumed that a student who can perform a skill at a given level of difficulty in a particular type of content material will successfully do so in all types or levels of reading material (Harris and Sipay, 1979).

The effective classroom teacher realizes that questioning strategies should be employed across the curriculum. All subject areas can provide situations which the teacher can utilize to focus questioning in order to help ameliorate perceived comprehension difficulties.

Thomas and Robinson (1982) and Tonjes and Zintz (1981) provide the following examples of questions classified according to the thought-getting process they foster, and suggest that they exemplify the kinds of questions that may be used for development of basic comprehension skills in the various disciplines:

Grasping Directly Stated Details or Facts

- Science: (1) What conditions are probably necessary for a volcano to erupt?
- (2) You know what catalysts are. What are their unusual properties?
- Literature: (1) What did Richard Cory do at the end of the poem? When?
- Art/Literature: (1) Draw this character just as he is portrayed in this story? First, write down the details the writer uses to help you visualize him?
- Social Studies: (1) How many years may an American President serve?
- (2) How many stages does a bill have to go through to become a law?

Understanding the Main Idea

All Reading Subject: After introductory work, students are asked, "Can you find the main idea of this passage? Look for the point the paragraph makes; the broadest, most significant message of the author; the idea the author wants most of all to drive home and leave with you."

- Literature: (1) Read to find out why this selection has the title "The Most Dangerous Game".
- (2) Write a telegram of ten words or less conveying the broadest, most significant information in this paragraph.
- (3) What is a good title for this essay?
- Science: (1) Read the procedures you will follow in this laboratory experiment. Give the purpose of the experiment in a sentence or two.

Grasping the Sequence of Ideas, Events, or Steps

Social Studies: (1) Read this selection about the growth of our country into nationhood. Note the important events in order, associate them with their dates and think how each event led up to the next one.

Literature: (1) Briefly describe the character at the beginning of the story. Then describe him toward the close. List in order the people, things, and events that caused the character to change during the story.

Mathematics: (1) Read through this explanation of how the formula was derived. See if you can follow the steps that lead to its final form.

Science: (1) List the events that occur in the water cycle.
(2) List the steps to follow in focusing a microscope on a slide.

Grasping Implied Meaning or Drawing Inferences

Social Studies: (1) What can you learn about the customs and values of the Blackfoot Indians from reading this selection?

Science: (1) From the characteristics of the bill of this bird, what do you know about its eating habits?

Literature: (1) Young Garth took certain vows when he became a knight. What were those vows and what do they reveal to you about the values of his day?

Sensing Relationship of Time, Place, Cause and Effect

Science: (1) If you drop a needle carefully upon the surface of water, it will float. Can you explain why?

Social Studies: (1) You are living in the days of the Crusaders. Why will you go on a Crusade if you are (a) a priest, (b) a knight, (c) a scholar, (d) a king?

(2) Read the following description of the dumping of garbage into a community river and then brainstorm possible effects.

(3) History is a record of a chain of causes and effects. Read the passage to answer this question. "What causes led to the United States' purchase of the Louisiana Territory, and how did it in turn become a cause with its own effect on U.S. national growth?"

(Thomas and Robinson, 1982, pp. 85-89; Tonjes and Zintz, 1981, p. 191)

Because questions are an important aspect of reading instruction and comprehension, individuals such as Bloom (1956), have developed taxonomies which may be used to differentiate various types of questions. Though specific categories may be collapsed and labels differ in each taxonomy, the concepts and ideas gained from reading a text are seen to progress in complexity from knowledge (facts and definitions), to comprehension (paraphrase, infer, imply), to application, to analysis, to synthesis, and finally to generalization or evaluation (Langer, 1985).

However, during the past decade theorists in reading have placed more stress on the interactive nature of the reading process. Recent theories of reading comprehension suggest that reading is not simply a text-based activity but an interactive or (transactive) process in which reader and text both contribute to the meaning that evolves. Langer (1985) and Farrar (1986) state that research investigating text schema and comprehension has generally shown that recall of text content and organization is based on both text and non-text factors. Consequently questions cannot depend simply upon text complexity for their genesis. If they are to reflect the process involved in comprehension they need to account for the interaction of the reader's knowledge with the complexities of the text. Langer (1985, p. 588) summarizes the results of research when she states that "the construction of meaning from text involves a variety of complex processes that cannot be explained in simple linear, or even recursive models".

It is not the writer's intention to underrate the value of the aforementioned taxonomies, but few educators would suggest it necessary to hold every dimension of these taxonomies in mind in order to develop appropriate comprehension questions for students. However, the teacher does need to be aware of the various major groupings and attempt to provide reading and thinking situations in each one where possible. The greatest value

of the taxonomies may be that they emphasize a need for the recognition and development of varied types of questioning and thinking, and consequently may help teachers to avoid an overemphasis upon simple memory or recall questioning which has tended to handicap versatility in comprehension ability in the content areas (Lamb and Arnold, 1980).

Given the importance of questioning in classroom life, teachers have an obligation to their students to ask useful questions. Pearson (1984) contends useful questioning will increase the likelihood that students will:

- (1) focus their attention on important aspects of the text;
- (2) relate information in a text to the most appropriate set of background experiences;
- (3) create a coherent framework for understanding and remembering the text;
- (4) allow students to practice cognitive skills that they will ultimately be able to use on their own. (p. 274)

While the questioning taxonomies previously discussed may be of limited use to the classroom teacher, Pearson and Johnson (1978) provide a refinement of the taxonomy categories by proposing a system for analyzing question and answer relationships. Such a system may be useful to teachers in their endeavours to develop effective and appropriate questioning. The procedure emphasizes the relationship between information presented in the text and

information that has come from a reader's store of prior knowledge. The Pearson and Johnson system involves three categories: text explicit, text implicit, and script implicit relationships. A question and answer are textually explicit when both are derived from the text and the relationship between them is explicitly cued by the text. A question and answer relationship is considered textually implicit if both question and answer are derived from the text but there is no expressed grammatical cue tying the question to the answer. A question and answer share a scripturally implicit relationship whenever a plausible nontextual response is given to a question derived from the text.

Textually explicit question and answer relationships require literal recall. Textually implicit question and answer relationships require text-to-text inferences. Scripturally implicit question and answer relationships require text-to-schema inference. Pearson and Johnson liken these to reading the lines, reading between the lines, and reading beyond the lines (Strange, 1984).

The Pearson and Johnson procedure is intuitively appealing because it is relatively simple, emphasizes cognitive processes "within the reader's head", and apparently can be practically and beneficially applied in reading instruction. Thompson and Gipe (1985) report that research regarding practical application of this procedure

suggests that it has some validity, since students have benefited from the application.

One explanation for the poor performance of students on inferential questions in tests may be that they have received insufficient or inappropriate practice in forming these relations. If students anticipate questions that require integration, they may develop a mind set towards print which focuses on interpretation rather than upon remembering facts. Therefore, if the Pearson and Johnson procedure is employed by teachers to evaluate the reading comprehension questions that students are asked, its use could facilitate development of those inferential skills which are so important to reading comprehension (Hansen, 1981).

Aulls (1978) and Tonjes and Zintz (1981) suggest that the Taba (1966) questioning procedure is one that may be of benefit in assisting teachers to utilize questions as a method of developing student comprehension abilities. The Taba procedure is an hierarchical model for narrative or expository material. The ideas can apply across the curriculum and can help greatly in demonstrating how to sequence questions to get at higher-level thought. The Taba procedure divides questioning into three parts: concept diagnosis, interpretation of data, and assimilation of knowledge. Within each part is contained a sequence of four basic question types.

1. Open Questions: These elicit factual information necessary if one is to be able to respond to all higher level questions.
2. Focusing Questions: These designate specific ideas or facts to be compared or contrasted.
3. Interpretative Questions: These questions help students see relationships among facts, ideas or events.
4. Capstone Question: This calls for a high level of abstraction or the supplying of a generalizing principle.

(Tonjes and Zintz, 1981, p. 290)

The four-step sequence of questions within the Taba model has the potential for being an effective method that teachers can employ to increase students' comprehension abilities in the content areas. The model builds extensive student involvement at the cognitive meaning level before moving to higher levels of thinking. Essentially, this sequence of questioning represents a lifting of the discussion questions from cognitive memory to convergent thinking, to either divergent or evaluative thinking, this in order to make a generalization about what has been read.

— Another strategy which teachers can employ in their questioning procedures is the straightforward walk-through process.

1. The teacher and class skim-read together to identify the entry question, which most likely will be concerned with the main theme or scope. Other questions are also written on the chalkboard as they are

- offered and saved for later clarification.
2. The meanings of the questions are clarified.
3. Students read selectively to answer the questions.
4. Tentative answers are given, examined, clarified, and converted into supporting structure questions.
5. The process is repeated until all are ready to construct their own hierarchy of questions for independently studying the selection.
6. The group summarizes, based on the questions raised and investigated.

(Tonjes and Zintz, 1981, p. 291)

Although not disparaging the value of questions, one can dispute the validity of using a teaching procedure with some children, which on one hand is designed to teach a particular comprehension process, but which also presumes prior possession of that skill in order to accomplish the task. In other words, by using textually implicit questions to teach students that particular level of comprehension, the teacher may be presuming that they already possess the skill to draw implicit relationships from text material. Herber and Nelson (1984) suggest using a simulation strategy as a preliminary to questions. This involves the use of statements initially, instead of questions. This approach will help students to recognize information before they are required to produce it by answering questions. Such statements will stimulate the process of comprehending at higher levels of thinking and

will familiarize students with that process. Once familiarity has been achieved, questions again become an appropriate and valuable way to help students comprehend text material.

It is suggested that teachers can establish an instructional sequence that moves students along a continuum of developing independence. The strategy outline is as follows:

1. The teacher prepares statements based on the text material for students' reactions. References are added to indicate where students might look in the text to determine if there is information to support the statements (page, column, and paragraph, if necessary).
2. The teacher prepares statements for students' reactions. No references are given.
3. The teacher prepares questions for students to answer. References are given to indicate where students might look in the text to find information which, when combined, might answer the question.
4. The teacher prepares questions for students to answer. No references are given.
5. Students survey the material, raise their own questions and answer them.
6. Students produce statements of meaning, concepts and ideas as they read.

(Herber and Nelson, 1984, p. 312)

Steps 1-4 in this procedure are teacher-directed, while steps 5 and 6 are student-directed. Such a procedure is of special use to the teacher who wishes to

focus on individual student weaknesses because within each of the steps in the sequence the teacher can accommodate a range of ability and achievement by the sophistication of the statement or question which he provided to the student.

Questions need not always be posed by the teacher; students should also be given the opportunity to formulate and ask questions. Ciadiello (1986) suggests that the extent of student involvement in questioning is just as important as the level of questions being asked. Similarly, Helfeldt and Lalik (1979) indicate that teacher questioning is only a part of effective questioning in the classroom. Reciprocal teacher-student questioning can play an important role in developing reading comprehension. The inherent value of active involvement by students in formulating questions cannot be denied. The following selected strategies lend themselves to involvement by students in developing questions, reasons, and purposes for reading in order that they may comprehend content material more effectively.

ReQuest

The ReQuest strategy was developed to help students adopt an active questioning approach to text reading. Students are guided in this process by the teacher who models the question-asking procedure and attempts to

elicit higher-level questions. The ReQuest procedure can be applied to both narrative and expository materials.

In the ReQuest activity, both the teacher and students read silently specified portions of the text together and then take turns asking each other questions. Students ask the first series of questions, which act gives the teacher the opportunity to appraise the level of their analysis. If the students merely produce textually explicit questions, then the teacher attempts to model high-order questions on that same section of text after students have fully exhausted their array of questions. An outline of the preparatory steps for a ReQuest session are as follows:

1. Analyze the text selection for major concepts and the sections portraying or containing these concepts.
2. Determine prediction points in the story or text that allow the reader to form expectations about upcoming sections.
3. Explain the general ReQuest procedure to the students.
4. When the final prediction point in the selection is reached, have students generate all the predictions they can think of for the final outcome of the selection. List the predictions verbatim on the board and have students vote on the ones they feel are most plausible.

(Tierney, Readence and Dishner, 1980, pp. 11-18)

ReQuest can function as an effective method for guiding students' comprehension of a story or text selection and can also be used by the teachers as pre-

reading strategy if desired. Perhaps ReQuest's greatest strength is its modelling of appropriate questions for the student by the teacher.

Study Guide

A study guide is a teaching aid written by the teacher to be used by the student in developing reading skills for the purpose of enhancing his comprehension of textual material. Guides can be designed to lead students through levels of comprehension from literal to interpretative to applicative, or they can be designed to focus on the internal patterns of paragraphs such as comparison and contrast, cause and effect, and main idea or details. They can also be designed to lead students through specific skill development of conclusions, relationships, and generalizations (Tutolo, 1984).

Study guides provide a pathway to the major concepts in a content area and counter the more traditional "sink or swim" content reading assignments. A teacher-desired study guide possesses the following characteristics:

1. It focuses student attention on major concepts at different levels of understanding.
2. It fosters student reaction to the text material at each student's own level of understanding.
3. It directs student's thinking processes in extracting information from text material.

4. It can serve as the basis for follow-up discussion in small groups to collaborate on the explication of text concepts and extend individual comprehension.

The steps to be followed in developing a study guide are:

1. Determine the major concepts and important details in a text chapter.
2. Develop questions that reflect these major concepts and details at multiple levels of understanding. In the initial guides developed, provide page and paragraph indicators to demonstrate the process of locating and extracting information.
3. Assign the study guide as an adjunct to independent text reading. Then, have students discuss and defend their responses in small groups.

(Readence, Bean, and Baldwin, 1981, pp. 142-143)

The study group step is an integral part of the application of study guide material and is essential to its success as an aid to comprehension. Since not all students will be able to answer the whole study guide correctly, the discussion step gives everyone exposure to the complete body of information.

Selective Reading Guide-O-Rama

The Reading Guide-O-Rama, much like a study guide, is a series of teacher-devised guide statements that accompany a text reading assignment. The guide statements are structured in such a way as to direct students'

reading of a text selection toward the most important information. The Guide-O-Rama provides students with a model of purposeful and selective text reading. It may be viewed as a reasonable alternative to the disorganized plodding through a text chapter which is the antithesis of an active, purposeful approach to comprehending text concepts. The steps that follow outline the construction of a Guide-O-Rama for any content area:

1. Determine the overall purpose for a particular reading assignment.
2. Select those sections of the text chapter which are necessary to achieve the overall purpose.
3. Based upon close analysis of his own reading strategies for the chapter, the teacher decides what operations students must engage in to achieve the purpose of the reading assignment.
4. Develop guide statements to direct student's reading of the text chapter.
5. Provide students with a written guide specifying what to look for and what to do with the text information.

(Tierney, Readence and Dishner, 1980, pp. 69-72)

As previously mentioned, the Guide-O-Rama is intended as a model of proficient reading for the student. Therefore, the teacher may not need to develop guide material for every unit or chapter assignment. Guide material would seem likely to be most helpful to students experiencing difficulty, or in the initial stages of a content class where the text and its related concepts may be unfamiliar to the student.

Guided Reading Procedure

The Guided Reading Procedure (GRP) is an integrated lesson approach designed to insure that students understand and remember key information from their texts. The GRP highlights the comprehension processes of collaborative brainstorming; rereading a selection to correct inconsistencies and to fill in incomplete information; and organizing information for long-term retention and retrieval. In short, the GRP provides a model of the essential processes for independent growth in comprehension.

The steps to a well-integrated GRP lesson are as follows:

1. Have the students read a selection according to the following scenario:
 - (a) Set a specific overall purpose for the assignment. (e.g., in a health class unit on mystifying maladies, suggest the following purpose: "Determine whether or not there is an effective cure for warts.")
 - (b) Set a second more general purpose: "Be prepared to recall as many supporting details as you can without looking back at the text selection."
2. After the initial reading is completed, have students recall everything they remember and record this information on the chalkboard.
3. As students become aware of information not recalled or of inconsistencies requiring correction, have them go back and review the selection to fill in missing information.

4. Have students organize the random, verbatim information on the chalkboard into categories, or main ideas and subordinate details. The end result may be an outline or graphic organizer.
5. Give the students a short-term memory/comprehension quiz on the GRP selection that elicits thinking at the different levels of comprehension.
6. This is a key step in the GRP. One week later give students a delayed recall surprise quiz on this same selection. Chances are, some forgetting will have occurred. However, on subsequent GRP sessions, students may develop a mind-set to organize and synthesize information for long-term retention.

(Readence, Bean, and Baldwin, 1981, pp. 149-151)

Systems of Study Reading

The preceding sections of this chapter have dealt primarily with the means by which the acquisition of comprehension in the content areas can be facilitated through questioning and questioning-related strategies. The focus of the present section is on the study strategies which help students to ask questions of their text material thus enabling them to retrieve and retain information. Clearly the ability to retain and recall information is as important as is the ability to learn it in the first place. In study situations where questions are not provided for readers, self-questioning may be a useful tool for readers to use in directing their attention to important concepts and facts in the material.

Self-generation of questions during study can lead to improved performance in comprehension (Martin, 1983). A number of reading strategies have been developed to aid students in studying and comprehending text materials. Hence, the teacher who is concerned about the comprehension abilities of his students should not overlook the role which study strategies can play in increasing comprehension.

A second reason why teachers should employ study strategies in content area classes is to develop in students those habits which encourage and assist independent learning. To the extent that students learn to study effectively on their own, they will be capable of continued reading and learning in the absence of explicit external guidance.

There are numerous systems of study reading which have been developed over the years. It should be remembered that the following strategies are merely suggestions and that application of these procedures is as flexible as the individual needs of those who decide to use them.

The SQ3R procedure (Survey, Questions, Read, Recite, Review) was developed by Robinson (1978). The following steps describe SQ3R:

1. **Survey:** This initial preview step encourages the reader to skim the reading assignment in order to answer broad questions about its content. The reader should spend several minutes quickly reading the opening paragraphs of the selection, major headings and subheadings, and possibly the chapter summary. Attention should also be directed to pictures, charts, and italicized words. At the conclusion of the survey, the reader should be able to answer the question "What is this chapter about?".
2. **Question:** In stage two the reader begins to progress sequentially through the text, mentally or in writing, converting chapter headings into questions. For example, the heading "Characteristics of Emulsions" would be transformed to "What are the characteristics of emulsions?".
3. **Read:** As readers create questions (step 2), they read to find answers to their questions.
4. **Recite:** After each section of the text is read, the reader pauses briefly to: (a) determine whether or not the question posed in step 2 has been answered satisfactorily, and (b) rehearse the answer. In this manner steps 2, 3, and 4 are repeated as the reader progresses through the selection.
5. **Review:** At the end of the selection the reader spends a few minutes trying to recall main ideas and important details from the entire reading assignment. The review may also entail paging through the chapter using each heading as a focus. Frequently distributed reviews are recommended to promote long-term recall.

(Readence, Bean, and Baldwin, 1981, p. 167)

It has been suggested that using all five steps in SQ3R may be too complicated or time-consuming for some students. If this should be the case, an alternative 4-step strategy is suggested. The procedure is as follows:

1. Set a purpose.
2. Ask questions related to the purpose;
3. Read to find answers to questions;
4. Summarize in your own words what has been learned.

(Tonjes and Zintz, 1981, p. 249)

REAP is another reading and study skills strategy. It is based on the concept that individuals must process information and organize it in a way that is useful to them as well as to others. The steps in this strategy are:

1. R - read to discover author's message.
2. E - encode the message by putting it into your own words.
3. A - annotate by rewriting the message in notes for your self and others.
4. P - ponder or process the meaning by thinking about it yourself or discussing it with others.

(Tonjes and Zintz, 1981, p. 249)

The key step in this method is the annotation, whereby readers must differentiate the writer's ideas, translate them into their own language, and then summarize the results in writing.

The primary rationale behind the utilization of content reading comprehension strategies as the basis for a corrective reading program is that reading instruction at the middle and secondary levels should be defined in terms of reading to learn rather than learning to read. The reading requirements of the disabled reader in middle

and post-elementary grades most often entail the application of comprehension processes to specific content tasks. It is the writer's contention, that classroom content teachers are in the best position to relate reading needs to the comprehension demands of their own disciplines.

The effective teacher realizes that questioning is fundamental to efficient teaching of comprehension. Well-formulated questions can stimulate and promote comprehension as students interact with one another or the text material. Questioning can be of special value in corrective reading programs because questions can be adjusted to the needs of students and their ability to respond, ranging from simple to profound, concrete to abstract. Good questions can reinforce the reading skills that students already have by providing practice in the application of those skills. Good questions as Herber and Nelson (1984) suggest, accompanied by reinforcing feedback on the nature and quality of responses, can raise the student's level of sophistication in their use of reading skills implicit in those questions.

Obviously not all the suggested strategies and techniques for improving content reading comprehension will work for every teacher and student in every content area. Application of the various strategies is dependent upon the learner and the specific learning situation. However, students who are exposed to the systematic

development of selected comprehension strategies as they relate to reading in a content class, are given a framework whereby they may become proficient readers and, ultimately, independent learners.

Developing Comprehension Through Lower and Higher Level Questioning

Comprehension should logically be considered the heart of reading instruction, and the major goal of that instruction should be the provision of learning activities that will enable students to think about and react to what they read - in short, to read for meaning. For students of the upper elementary and secondary grades, appropriate questioning strategies should be employed to assist students in developing comprehension abilities to the extent that they may "read to learn" efficiently and effectively in all areas of the content curriculum.

Comprehension involves thinking. As there are various levels in the hierarchy of thinking, so there are various levels of comprehension. Higher levels of comprehension would obviously include higher levels of thinking. As a result, the effective classroom teacher will be concerned with the development of the literal, inferential, and evaluative comprehension abilities of his students whenever the opportunity presents itself, rather than with the factual right-answer syndrome commonly associated with comprehension in content area reading.

Teachers who recognize the value of questioning and who emphasize the need for the development of varied types of questioning and thinking will avoid an overemphasis upon simple recall or memory questions which may handicap students' comprehension abilities in the content areas.

The writer does not suggest that teachers attempt to utilize all of the various types and levels of questioning in each and every class period. Application of questioning techniques is dependent upon the specific students involved and the specific learning situation. However, the astute teacher, once he has determined the comprehension needs of his students, will select those types of questions most appropriate to building from one type of thinking task to the next. As teachers become used to considering questioning as a viable tool for reaching the objectives of given lessons, they develop expertise in choosing appropriate questions.

In addition, if the varied uses of questioning for specific purposes are realized by students - brought to their level of consciousness - the students themselves will begin to improve in the use of questions they ask about what they have read and what they plan to read. The following short story, The Love Potion, and its accompanying questions is an attempt by the writer to illustrate how teachers can employ and promote the kinds of questions that can result in increased reading comprehension in any content area.

The Love Potion

Alan Adams, as nervous as a kitten, went up the dark and creaky stairs, and peered about for a long time on the dim landing before he found the name he wanted written on one of the doors.

He pushed open this door, as he had been told to do, and found himself in a tiny room. The room contained no furniture but a plain kitchen table, a rocking-chair, and an ordinary chair. An old man sat in the rocking-chair, reading a newspaper. Alan, without a word handed him the card he had been given. "Sit down, Mr. Adams," said the old man very politely. "I am glad to make your acquaintance."

"Is it true," asked Alan, "that you have certain mixtures that have - er - quite extraordinary effects?"

"My dear sir," replied the old man, "I think nothing I sell has effects which could be described as ordinary."

"Well, the fact is..." began Alan.

"Here, for example," interrupted the old man, reaching for a bottle from the shelf. "Here is a liquid as colourless as water, almost tasteless, quite undetectable in wine or coffee. It is quite undetectable to any known method of autopsy."

"Do you mean it is poison?" whispered Alan, very much afraid.

"Call it a glove-cleaner if you like," said the old man. "Maybe it will clean gloves. I call it a life-cleaner."

"I want nothing like that," said Alan.

"Probably it is just as well," said the old man. "Do you know the price of this? For one teaspoonful, which is sufficient, I ask five thousand dollars."

"I hope all your mixtures are not as expensive," said Alan anxiously.

"Oh dear, no," said the old man. "It would be no good charging that sort of price for a love potion, for example. Young people who need a love potion very seldom have five thousand dollars. Otherwise they wouldn't need a love potion."

"I am glad to hear that," said Alan.

"I look at it like this," said the old man. "Please a customer with one article, and he will come back when he needs another. Even if it is more costly. He will save up for it, if necessary."

"So, you really do sell love potions," said Alan.

"If I didn't sell love potions, I would not have mentioned the other matter to you," said the old man.

"And these potions," said Alan. "They are not just-just-"

"Oh, no," said the old man. "Their effects are lasting. Give one tiny drop of this to the young lady - its flavour is undetectable in orange juice or soup - and

she will change altogether. She will want no other but your company."

"I can hardly believe it," said Alan. "She is so fond of parties."

"She will not like them any more," said the old man. "She will be afraid of the pretty girls you may meet."

"She will actually be jealous? cried Alan. "Of me?"

"Yes, she will want to be everything to you."

"She is, already. Only she doesn't care about it."

"She will, when she takes this. She will care greatly. You will be her sole interest in life."

"Wonderful!" cried Alan. "I can hardly imagine Diana like that!"

"You will not have to use your imagination," said the old man. "And by the way, since there are always pretty ladies, if by any chance you should, later on, slip a little, you need not worry. She will forgive you in the end."

"That will not happen," said Alan seriously.

"Of course not," said the old man. "But, if it did, you need not worry. She would never divorce you. She would love you too much."

"And how much for this wonderful mixture?" asked Alan.

"It is not as dear," said the old man "as the glove-cleaner, or life-cleaner, as I sometimes call it. No. That is five thousand dollars, never a penny less. One

has to be older than you are, to buy that sort of thing. One has to save up for it."

"But the love potion?" said Alan.

"Oh, that," said the old man, placing a tiny vial on the kitchen table, "that is just a dollar."

"I can't tell you how grateful I am," said Alan, watching him fill it.

"I like to oblige," said the old man. "Then customers come back, later in life, when they are better off, and want more expensive things. Here you are. You will find it very effective."

"Thank you again," said Alan as he opened the door to leave, "Good-bye."

"Au revoir," said the old man.

("The Love Potion" is an unpublished short story which the writer obtained from John Thorne, a friend and junior high school language teacher.)

Literal Questions:

1. What is the main event or happening in this story?
2. What is the price of the love potion?
3. Put a (T) next to the statements that are true and an (F) next to those that are false.

- _____ a. The young man needs poison now.
- _____ b. The young man loves Diana.
- _____ c. Diana loves the young man.
- _____ d. The love potion is almost tasteless.
- _____ e. A young man can afford the poison.
- _____ f. The poison cost ten dollars.

4. Put a checkmark next to the effects the love potion will have on Diana.

- _____ a. She will care very much about Alan.
- _____ b. She won't go to parties.
- _____ c. She will walk around with tears in her eyes.
- _____ d. Alan will be the only interest in her life.
- _____ e. She won't be jealous.

Inferential and Evaluative Questions:

5. What does the old man mean when he calls the poison a "life-cleaner"?
6. In the first sentence Alan is said to be "as nervous as a kitten". What does this mean?
7. What do you think is the old man's attitude towards Alan and Diana?
8. From which of the old man's actions can you infer his attitude?
9. Why do you think that the old man sells the love potion for only a dollar while he charges five thousand for the poison?
10. What can you infer from the fact that the old man's last words are "au-revoir"?
11. What general statement can you make about the writer's attitude toward love and marriage?
12. What do you think was the writer's purpose in writing this story?

Conclusion

Give a man a fish and he eats for a day; teach a man to fish and he eats for a lifetime.

- Chinese proverb

A major contention of this thesis has been that a primary function of education should be to assist students, especially those who are disabled readers, become effective readers and learners who can make the transition from "learning to read" to "reading to learn". The critical importance of reading comprehension ability in helping students to achieve this goal is highlighted by the rapid expansion of knowledge and information in today's society. Curriculums that empower students to locate and process knowledge rather than simply memorize facts are quickly becoming indispensable.

Much has been written about North America's movement from the industrial era into the "information age". The extraordinary rate of emerging knowledge in today's world has, in part, prompted this transition. The requirements of the information age clearly affect educational goals and practices. The 1983 report Educating Americans for the 21st Century (cited in McTighe and Schollenberger, 1985) states that the basic skills of the 21st century include:

communication and higher problem-solving skills, and scientific and technological literacy - the thinking and reading tools that allow us to understand the technological world around us.... Development of students' capabilities for

problem-solving and critical, evaluative reading and thinking in all areas of learning is presented as a fundamental goal. (p. 3)

Similar needs have been acknowledged by the United States Association for Supervision and Curriculum Development (cited in Costa, 1985, p. 3) in its 1984 resolution calling for: "Further development and emphasis in teaching skills of problem solving, reasoning, conceptualization, and analysis, which are among the neglected basics needed in tomorrow's society." Additional support for this view comes from the Education Commission of the States, 1982 (cited in Costa, 1985, p. 3) which identified those skills that would be considered basic for the future. It listed evaluation and analysis skills, critical thinking, problem solving strategies, organizational and reference skills, synthesis, application, and communication skills through a variety of modes as essential skills for learners to acquire (McTighe and Schollenberger, 1985).

Today there is a growing realization worldwide, by educators as well as the general public, that the level of a society's development depends on the level of intellectual development of its people. Indeed, Ivis Alberto Machado, the former Venezuelan Minister of Intellectual Development, reminds us that all human beings have the right to the full development of their intellect (Costa, 1985). Furthermore, recent research in education supports the belief of many educators that the increasing

interest in teaching thinking and comprehension skills is not just a backlash from the "back to basics" movement. Rather, it is a necessary and integral component of instruction in every classroom subject, and achievement depends largely on the inclusion of those mental processes prerequisite to mastery of that subject. The greatest contribution of today's "Information Age" to education in the 1980's and 1990's may well be the inclusion of intellectual processes as essential to all learning (Costa, 1985).

In our educational system, the role of the classroom teacher is critical to the achievement of such goals. Teachers are the individuals who implement educational policy and curriculum content, scope and sequence. Most important, they are the ones who establish the educational climate and who structure learning experiences. Early in their school experience, students learn to listen and respond to the language of the teacher. Emulation of significant others is a basic motive for learning. From questions and other statements that the teacher poses, students derive their cues for expected behavior. Questions are the intellectual tools by which teachers most often elicit the desired behavior of their students. Thus, they can use questions to elicit certain cognitive objectives or thinking and comprehension skills. Embedded in questions and other statements are the cues for the cognitive task or behavior the student is to perform.

With a model of intellectual functioning in mind the classroom content teacher can manipulate the syntactical structure of questions and other statements to invite students to accept information, to process or compare that information with what they already know, to draw meaningful relationships, and to apply or transfer those relationships to hypothetical or novel situations (Costa, 1985).

While the importance of cognitive development has been widely recognized, performance of students on existing measures of higher-order thinking and comprehension ability, as alluded to earlier in this thesis, points to a critical need for students to develop the skills and attitudes of effective thinking. The rapid increase in the volume of knowledge caused by the Information Age in which we live and its accompanying prerequisite skills for life in tomorrow's society, compounded by the incidence of reading comprehension disability already apparent in our schools, has particular significance for educators. It seems clear that strategies which employ and emphasize questioning and other related teaching techniques to develop students' reading comprehension abilities so that they may acquire the life-long learning and thinking skills necessary to procure and process information within an ever-expanding world of knowledge is sound educational philosophy.

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