DOCUMENT RESUME

ED 240 299 CE 038 138

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TITLE New Views on Developing Basic Skills with Adults.
SPONS AGENCY National Inst. of Education (ED), Washington, DC.
PUB DATE Jan 84
NOTE 31p.; Paper presented at the National Adult Literacy Conference (Washington, DC, January 19-20, 1984). For other conference papers, see CE 038 126-139.
PUB TYPE Speeches/Conference Papers (150) -- Viewpoints (120)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adult Basic Education; Adult Education; *Adult Learning; *Adult Literacy; *Educational Needs; Educational Philosophy; Functional Literacy; *Instructional Materials; *Reading Instruction; *Research Needs; Teaching Methods
IDENTIFIERS *National Adult Literacy Project

ABSTRACT

During the past 40 years, the definition of literacy and the needs of adult literacy education have changed. Before World War II, adult literacy programs usually focused on teaching totally illiterate adults to read and write at the simplest levels. Later, functional literacy at about the fifth grade level was promoted through the programs. Now, however, a reading level of twelfth grade is needed for adults to function in an increasingly complex technical society. Reading instructional materials can be classified in stages from one to five from a low to an advanced level, with one being simple reading skills such as those acquired by primary grade children, and five being more abstract reasoning skills such as those acquired by the average high school graduates. The amount of time required for adults to pass through these various stages of reading has not been determined, but unless adults have acquired a broad general education, it takes considerably longer than the usual attendance period at literacy programs. If literacy programs are to be successful at raising the reading levels of their participants to a twelfth grade level, more research is needed on how this can be accomplished. More appropriate materials need to be developed, along with diagnostic tests for adult programs. Finally, research is needed to show the influence of cognition on reading and the influence of reading on cognition. Such research efforts can help to prepare adults for the increasingly technical jobs of the future. (KC)

New Views on Developing Basic Skills with Adults

Prepared for the
National Conference on Adult Literacy
January 19-20, 1984
Washington, D.C.

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Adult literacy seems to present an ever growing challenge--greater perhaps than the acknowledged challenge of literacy among those still in school. The problems in adult literacy have grown as the field has come to include the full range of reading ability--from beginning reading to highly competent and skilled reading. This broad range of competency has not always been the province of adult literacy programs. Not too long ago, before World War II, those who taught in adult literacy programs usually taught a little reading and writing to those who were completely illiterate, usually newcomers to the United States, giving instruction also in how to become a citizen. Most adult students who attended these literacy classes had attended school for fewer than 4 or 5 years. Seldom were they literate in another language.

For these adult illiterates, the goal was to advance from nothing to something. What exactly that something was to be was not always clear. But one might guess that it was to a relatively low level--enough to pass a literacy test for voting, to read simple signs, to write one's

name and address, and perhaps to read the headlines and captions in a tabloid.

World War II marked an important change. The greater complexity of the military technology, the use of more difficult instructional manuals, and the more complex organizations and procedures required more than "a little bit of literacy." These tasks required a level of literacy closer to that of typical elementary school graduates.

In the 40 years since World War II, the literacy needs have advanced even more--from that of an elementary to that of a typical high school graduate--from an average reading level of 8th grade to a 12th grade. The educational attainments, according to United States census data, have advanced in a similar direction, from an average attainment of 8th grade in 1940 to an average of nearly 12th grade in 1980.

Thus, the nature of the adult student seeking help with literacy has changed vastly. Some still seek help with basic literacy. But this group is shrinking in comparison with those whose literacy needs go beyond the beginning.

The changing nature of the adult student, the client, is perhaps one of the main reasons for the confusion over the extent of adult illiteracy in the United States. A journalist who interviewed me recently complained that he was quite confused about adult illiteracy. He said he couldn't even get agreement on the number of illiterates. Some said there were 13 million, others said 26 million. I think I might have confused him even more when I said the estimate might be even higher, if we included the new illiterates--those whose literacy lagged behind the needs for the information age.

There are several other reasons why adult literacy presents a greater challenge than that of formal literacy. First, the long acknowldged

problems of reaching those in need, and maintaining their regular attendance and consistent interest.

Second, the tendency to underplay development and progression in the curriculum and in the achievement of the students. This no doubt is related to the tendency to underplay assessment and evaluation. There are few tests specifically meant for adults. Indeed at the advanced levels (high school and college) standardized reading tests for regular high school and college students are generally used. It is only at the middle, and upper elementary levels where special achievement tests for adults have been constructed within the recent past. But even when these tests are used, there seems to be a hesitation in using them for evaluating group or individual gains or for judging the effectiveness of programs. No doubt this stems from a great respect for adult students and a fear that a low score on a reading test, for example, might be interpreted as a judgment not only of the adult student's inadequate reading, but of his/her intelligence and general knowledge.

A third difficulty stems, I propose, from a lack of clarity as to what should be taught, when, to what students. Does reading progress in the same manner and at the same pace for adult students as for elementary and high school students? Some have argued that it could not be the same what with the adult's greater language, cognitive abilities and experience.

A fourth challenge is the rapidly changing structure of our economy which has brought unemployment to many in traditionally skilled work in heavy industry. Economists speak of ultimately absorbing many into the new electronic industries, after they have been retrained. Although it is not yet clear what such retraining will involve, it would seem

likely that the level of literacy required in these new jobs will be greater than that needed for skilled, heavy industry jobs, closer in fact, to levels typical for secondary school, or junior college graduates. Similar to the young people of today whose educational standards and expectations are being raised, the standards for adults are also rising. The need for retraining adults in the higher literacy will probably be an increasing responsibility of sdult education.

Thus, it seems as if in a 40 year period, the field of adult literacy has expanded its original responsibilities--from basic adult literacy (to 4th grade), to functional literacy (8th grade level), then to a high technical level (12th grade).

In the remainder of the paper I will consider what it means to read at these various literacy levels, what they imply for adults whose jobs and responsibilities require higher levels of literacy, and what this means for instruction, testing and evaluation, and diagnosis.

Let us assume, for the time being, that adult literacy encompases about the same range of proficiency as that of children and young people. Therefore, it may be useful for adult educators--planners, curriculum developers, teachers, evaluators--to understand the broad sweep of reading--from its beginnings to its most mature and highly skilled forms. For in essence, the main goal of adult literacy programs is to bring adults up from lower literacy levels to higher ones. As an introduction to developing levels, let us examine samples of text representing increasing levels of difficulty. (From J. Chall, Stages of Reading Development, McGraw-Hill, 1983, p. 39)

If we look at the passages which range in reading difficulty from a low to an advanced literacy level (Stages 1 to 5; or reading grade

equivalents of 1st through college graduate level) we note changes in vocabulary and concepts, in sentence structure and length, and in cognitive demands.

The easier passages, those at lower stages, use words that are generally familiar, common, concrete and short. The passages at higher levels have more words that are unfamiliar, difficult, technical, abstract and long. The sentence structure also changes--from short, simple sentences in the easier passages to longer, more complex sentences in the more difficult selections. The passages change in still other ways--the content tends to become more removed from common, everyday happenings. While content is usually concrete or elemental at the earlier levels, it becomes more abstract at the later stages, requiring more analytic and critical thought. These excerpts suggest that reading at successive levels of proficienty depends on ever more difficult and varied language, more complex ideas, and more advanced reading skills.

To move from one of these levels or stages to the next higher level takes considerable development. If an adult can read only at Stage2 level, for example, it will take considerable practice to reach a Stage 3. Let us consider now the kinds of changes that take place in individuals as they move from Stage to Stage.

The following characteristics, from my recent book, Stages of Reading Development are based on a synthesis of the research from psychology, linguistics, psycholinguistics, the neurosciences, and educational practice. (Chall, 1983)

Reading Stages--A Brief Introduction

The reading stages scheme presented below covers the range from prereading to highly mature, expert reading. Individuals may vary in the rate of their progression. Some move quickly; others more slowly. But

most tend to follow the same sequence of progression.

How well and how fast a person progresses through the stages--whether a child or an adult--depends upon the interaction of individual and environmental factors. That is, the individuals' abilities and freedom from handicaps, their schooling, home experiences, and the communities in which they live

Stage 1. Initial Reading, or Decoding Stage (Reading Grade Levels 1-2)

The essential aspect of Stage 1 is learning the arbitrary set of letters and associating these with the corresponding parts of spoken words. In this stage, adults as well as children interiorize cognitive knowledge about reading such as what the letters are for, how to know that bun is not bug, and how to know when a mistake is made. During this stage students learn to recognize about 1000 of the commonest words in the language and the most common letter-sound relationships. In addition they learn to read simple text containing limited recognition vocabularies. Essentially, little new information can be gained from the reading matter that can be read. The qualitative change that occurs at the end of this stage is the insight gained about the nature of the spelling system of the particular alphabetic language used.

Stage 2. Confirmation, Fluency, Ungluing from Print (Reading Grade Levels 2-3)

Stage 2 reading skills are still not sufficient for learning new information. But Stage 2 goes beyond Stage 1 in integrating the skills acquired in Stage 1. Because the content of what is read is still basically familiar, the reader can concentrate attention on the printed words, still the most common, high-frequency words. And with the basic decoding skills and insights learned in Stage 1, the reader can take advantage of what is said in the reading matter, matching it to his or her knowledge and language.

From: Chall, Jeanne S. Stages of Reading Development. New York: McGraw-Hill Book Company, 1983.

Excerpts from Typical Materials That can be Read at Successive Stages

Table 2.3

Stage 1	"May I go?" said Fay. "May I please go with you?"[a]
Stage 2	Spring was coming to Tait Primary School. On the new highway big trucks went by the school all day.[b]
Stage 3A	She smoothed her hair behind her ear as she lowered her hand. I could see she was eyeing *beauty* and trying to figure out a way to write about being beautiful without sounding even more conceited than she already was.[c]
Stage 3B	Early in the history of the world, men found that they could not communicate well by using only sign language. In some way that cannot be traced with any certainty, they devised spoken language.[d]
Stage 4	No matter what phenomena he is interested in, the scientist employs two main tools—theory and empirical research. Theory employs reason, language, and logic to suggest possible, or predict probable, relationships among various data gathered from the concrete world of experience.[e]
Stage 5	One of the objections to the hypothesis that a satisfying after effect of a mental connection works back upon it to strengthen it is that nobody has shown how this action does or could occur. It is the purpose of this article to show how a mechanism which is as possible psychologically as any of the mechanisms proposed to account for facilitation, inhibition, fatigue, strengthening by repetition, or other forms of modification could enable such an after effect to cause such a strengthening.[f]

[a] *American Book Primer*, p. 19
[b] Ginn 720, Grade 2', p. 48
[c] Ginn 720, Grade 5, p. 66
[d] Book F, *New Practice Reader*, Graves et al., Webster, New York, 1962
[e] Kathryn, A. B., *College Reading Skills* From Mason and J. Bresig, *Modern Society*, 3d ed., Prentice-Hall, Englewood Cliffs, N.J.,
[f] E. L. Thorndike, "Connectionism," *Psychological Review*, 1933, *all*, pp. 431–60

Although some additional, more complex phonic elements and generalizations are learned during Stage 2 and even later, it appears that what most readers learn in Stage 2 is to use their decoding knowledge, the redundancies of the language, and the redundancies of the stories read. They gain courage and skill in using context and thus gain fluency and speed. They read faster and with greater assurance. By the end of Stage 3, they can recognize 3000 of the most common words in the English language and can decode, sound out, words containing the common sound-letter relations.

Stage 3. Reading for Learning the New: A First Step (Reading Grade Levels 4-8)

When readers enter Stage 3, they start on the long course of reading to "learn the new"--new knowledge, information, thoughts and experiences. Most readers who enter this stage do quite well in decoding words they do not recognize immediately. For most readers the major hurdle becomes one of background knowledge, vocabulary, and cognitive abilities which are not up to those required by the materials they read. Therefore, texts appropriate for this level are within one viewpoint, and limited in technical complexities. This is in contrast to Stage 4 which is characterized by multiplicity of views and a greater complexity of ideas and language.

In a sense, entering Stage 3 fits the traditional conception of the difference between primary and later schooling: in the primary grades, one learns the rudiments of reading; in the later elementary grades, one learns to use reading for learning.

During Stages 1 and 2 what is learned concerns the relating of print to speech. In Stages 3 and beyond, what is learned concerns the relating of print to ideas. Very little new information about the world is learned from reading before Stage 3; more is learned from listening and watching. It is with the

beginning of Stage 3 that reading competes with these other means of knowing. However, at the beginning of Stage 3, learning from print is still less efficient than learning from listening and watching. Hypothetically, by the end of Stage 3 the efficiency of reading may equal and begin to surpass that of the other means of gaining new information, particularly listening.

Stage 3 reading is characterized by the growing importance of word meanings and of prior knowledge. The need to know something about what one is reading, if more is to be learned from the reading, becomes evident. Readers need to bring knowledge and experience to their reading if they are to learn from it (Chall, 1947, 1950; Kintsch, 1974). They also need to learn a process sometimes referred to as study skills--how to find information in a paragraph, chapter or book, and how to go about finding what one is looking for efficiently.

Stage 4. Multiple Viewpoints (High School)

The essential characteristic of reading in Stage 4 is that it involves dealing with more than one point of view. For example, in contrast to an elementary school textbook on American history, which presupposes Stage 3 reading, the textbook at the high-school level requires dealing with a variety of viewpoints. Compared to the elementary textbooks the increased weight and length of high-school level texts no doubt can be accounted for by greater depth of treatment and greater variety in points of view. Stage 4 reading may essentially involve an ability to deal with layers of facts and concepts added on to those acquired earlier. These other viewpoints can be acquired, however, because the necessary knowledge was learned earlier. Without the basic knowledge acquired in Stage 3, reading multiple viewpoints materials would be difficult.

How is Stage 4 acquired? Mostly, through formal education and/or through wide independent reading-- the assignments for reading and writing in the various school textbooks, original and other sources, and reference works in the physical, biological and social sciences; through reading of more mature fiction; and through the free reading of books, newspapers, and magazines. Dealing with more than one set of facts, various theories and multiple viewpoints, as one must in Stage 4, gives one practice in acquiring ever-more-difficult concepts and in learning how to acquire new concepts and new points of view through reading.

Stage 5. Construction and Reconstruction (A World View: College)

Stage 5 can be seen as reading that is essentially constructive. From reading what others say, the reader constructs knowledge for himself or herself. The processes depend upon analysis, synthesis, and judgment. The reader makes judgments as to what to read, how much of it to read, at what pace, and in how much detail. And when many sources are used, even if only two, he or she decides what sythesis is to be made. What does this mean? It means a struggle to balance one's comprehension of the ideas read, one's analysis of them and one's own ideas about them.

Adult Compared to Child Literacy

The above descriptions of the reading stages are greatly shortened versions of the more extensive descriptions. Because of space limitations here, it is not possible, in addition, to include relevant research evidence. (Chall, 1983).

For our purpose, here, it is hoped that the stages can be considered as a metaphor, a scheme for helping us get a picture of what reading is and how it changes in the life of individuals - from its beginnings to its advanced forms.

I suggest that the course of development of reading is essentially the same for adults and children, although perhaps there is a need for a somewhat different emphasis depending upon maturity, and different text content. But these changes may be needed as well for more precocious children as compared to the average. Let us consider a few similarities and differences in what the child and adult beginners need to learn. According to the stages scheme, both the 6 year old beginner and the 40 year old beginner need to learn to recognize in print the words they know when heard or spoken. There is usually no problem at this stage, for those who can speak the language, with regard to understanding what they read. Most difficulties they have in understanding what they read stem from inadequate recognition of words. It is their limited knowledge of the alphabetic principle and its automatic use that keeps them illiterates or non-readers.

Some adult educators, as well as early childhood educators, have a different view. Many teachers of totally illiterate adults tend to see themselves as teaching concepts, ideas and knowledge, from the start.* This view of the major needs of adult illiterates stems from many sources. One of these may come from the enthusiastic acceptance of the theories of Paulo Freire, who emphasizes the need for political consciousness among adult students. The appeal of Freire's theory has been strong. But sometimes it is overlcoked that his adult learners had little of no previous schooling while the typical

*The illiterate students may also not speak English. This presents still another problem of teaching the English language as well as the reading of it. But here too, it is not concepts and knowledge that are usually lacking, but the expression of them in the new language. These students also need to learn to recognize and decode English words in print, as well as to speak and understand them, if they are to learn to read.

adult basic literacy student in the United States today has been to school for a number of years and is considerably more sophisticated. There is also a tendency to overlook the fact that Paulo Fraire's reading program for beginners was developed with great care to teach them how to read. Only the most vital words are to be taught at the beginning and these are selected to teach a maximum number of sound-to-letter relations. [illegible] and decoding are a vital aspect of the Fraire program, [illegible] and political consciousness. This is in contrast to [illegible] reading programs for adult beginners which assume that interesting [illegible] text will lead naturally to word recognition.

Clinical experience in teaching adult beginners suggests the need for teaching and learning word recognition. The errors that adult beginners in our Reading Laboratory make are quite similar to those of younger beginners. Some teachers contend that recognition and decoding are not essential problems for most adult beginners because adults have more experience and more language than child beginners. If so, one may ask why these adults have not picked up reading informally since they are surrounded by signs, by newspapers, by TV commercials, and the like.

But of course there are differences--adult beginners have greater language and knowledge than do most child beginners. But then again, children are also considerably more advanced in knowledge and in language than in reading. The typical first graders know about 4000 words when heard. (Lorge and Chall, 1961). But it will take about 3 years of reading instruction before they are able to read them.

Other similarities and differences may be found between younger and adult readers. At first view, it would appear that among adults, a sense of failure may be more common. But not all children feel successful. Indeed, a considerable number of studies have found that from 10 to 15 percent of students are significantly below their grade placement and intellectual levels. Overall, perhaps about one-third of students in school experience a similar sense of failure. It is from this group that the various adult literacy programs get their clients.

Adults who are learning at Stages 1 and 2 suffer a disadvantage, as compared to children at these levels. The adults do not have interesting, enticing books that are available for children. It is through these books that children practice what they learn during their reading lessons.

Adults first learning to read can, of course, gain some practice by reading to their children. For progress in Stages 1 and particularly in Stage 2 where fluency is gained, adults as well as children need to read a lot. Overall, children are ahead on this need than are most adults.

At Stage 3, some general differences may be found between children and adults, but these differences also exist among children. The major tasks at Stage 3 are language and thought, as compared to recognition and decoding in Stages 1 and 2. Thus if the adults have considerable language and general knowledge, they should have little difficulty with Stage 3, assuming word recognition and decoding are in good form. But some children can also fall within this category. They have very extensive vocabularies and background knowledge.

At Stages 4 and 5, there are even fewer differences between the younger and the older students. For both the younger and older the challenge is to master abstraction, thought, complex language, broad knowledge, an extensive vocabulary, more efficient reading skills and a greater ability to analyze, to read critically and creatively. It takes the typical student about 16 years or more to progress from Stage 1 through 5. Does it take as long for adults? There is little evidence on this question.

One might hypothesize that most adults would need less time, with some differences by stages. The lower the stage, perhaps the less time for adults as compared to children. Thus Stages 1 and 2 may be mastered relatively quickly, in a few weeks or months, depending upon the excellences of the methods and materials and the teaching. There will probably be a slowing up at Stage 2, unless adequate reading materials are available for practice.

If Stage 3 instruction concentrates on work-type reading in an area where the adult students are knowledgeable and experienced, the time of learning may be shorter. But the reading may not transfer to other areas at the same level.

Most children need eight years to read at an eighth grade level. It may take adults less time. But if they have not acquired general knowledge in such areas as the biological and physical sciences, in health, and in literature, it may take longer.

Acquiring the skills and abilities of Stage 4 will generally take adults longer than those of Stage 3, unless they have the experiences and the language, content, and thought processes. If the adult students lack these, it may take considerable time to acquire them. How long, we do not know. But it would certainly be important to know.

The situation is similar for Stage 5. Generally, one would expect adult students to reach Stage 5, not from learning reading skills and strategies alone. It takes considerable education acquired formally or informally to read at this highly expert level.

Many of the skills and abilities needed at the various levels have been taught through exercises in readers, workbooks, and increasingly in computers. Yet, it would seem that for the full development of reading, particularly at Stages 4 and 5, a broad education as well as wide reading are essential.

Standards of Literacy

How well should adults read? What should be the minimal standards of literacy today and in the near future? There has been much difference of opinion on these questions. Some are calling for high standards. Others for low.

There tends to be agreement on the fact that universal literacy is a relatively recent phenomenon and among developed nations only. Among the developing nations, it is still enjoyed only by the few. And even among the developed nations, most people were illiterate up until about 100 years ago.

The growth in the number who are literate and in the extent and quality of their literacy can be viewed from a broad historical perspective. In simple agricultural societies, only the most elementary literacy skills were needed, such as writing one's name or keeping simple accounts. Reading by most people, when they were literate, was probably on a level characterized by Stage 1 or 2 - reading of simple, familiar texts such as would be sufficient for religious purposes - prayers and psalms-that had previously been memorized. Thus, although most people were totally illiterate, those who could read and write probably had a literacy level typical of the primary grades.

The coming of the industrial revolution brought with it the need for higher literacy levels. One might hypothesize a Stage 3 level (grade levels 4 to 8) - a level of reading that permitted learning from unfamiliar texts.

With the changes in production, a level permitting greater problem solving and analysis was required - Stage 4, or a high school graduate level. Such a level was needed more during the past decade, a time variously called the post-industrial age, the computer age, and the information age.

The studies of Sticht and his associates (1973) tend to confirm the recent increases in literacy needs. They found from a series of studies from the late 1960's on that the army job printed materials ranged from a 10th to a 12th grade level - higher than had been expected.

They also found that the higher the reading levels of the personnel, the more frequent the use of the job materials; and those rated higher in job proficiency were the better readers on the job reading test.

From these analyses the researchers recommended stronger literacy programs, with minimal standards at grade 7, instead of the then minimal level of 5.

In a more recent update of these studies, Sticht (1982) calls for a developmental rather than a remedial view toward adults needing assistance with literacy since in essence adult literacy starts with the preschool child in the home where literate parents are more effective teachers of reading than those who are illiterate or barely literate. Among other generalizations drawn by Sticht and his associates from over a decade of research were: (1) Students who achieve well in school generally have the literacy skills needed to perform job reading tasks. (2) Job reading tasks, which usually involve reading to do something (looking up significant facts, using graphics) are generally less difficult than tasks requiring the drawing of inferences and critical reading. (3) Literacy skill affects the use of printed information. Highly literate workers seek job-related information more by reading than by asking others. Less literate workers tend to seek information about jobs by asking others. (4) Job performers who use technical manuals perform job tasks more effectively than those who do not. "Thus literacy and its uses have a direct impact on proficiency and productivity."

Similar findings were reported by Mikulecky (1981) for industrial workers and students. He compared job literacy demands of workers with the literacy demands of high school students and students of technical schools.

He found that the workers faced more difficult job related literacy demands than did the students in school. Workers also reported reading more for job-related tasks than students for school-related tasks. Workers read an average of 143 minutes per day compared to 98 minutes for high school and 135 minutes for technical school students.

The workers read more difficult materials than the students, with even the blue-collar manuals and directions averaging a 10.5 level of difficulty. There was a direct relation between amount of time spent reading and reading ability - with those reading below a 6th grade reading level reading less than 15 minutes a day.

A clinical analysis of the problems of the lowest achievers revealed that some workers and students were so baffled by a 9th grade level passage from a newspaper that they were unable to replace as few as 3 out of 25 of the omitted words (cloze test). This included 5% of the workers, more than 10% of the technical school students and 16% of the high school students.

Thus, it would seem that the literacy problems of adults start early. From the Sticht and Mikulecky studies it would seem to start in the high school and earlier.

Trends in Adult Literacy

Are adult literacy standards improving? It is hard to tell since there are no systematic testing programs as there are for those in school. Trends for school age groups can be estimated from the National Assessment scores, the Scholastic Aptitude Tests, the Standardized Reading Achievement Tests, and from comparisons on special tests, (Chall, 1983).

Overall, the test scores for school age groups seem to indicate that during the past decade, literacy trends varied by age and grades. Generally, the younger groups (grades 1 to 4) made significant gains from 1970 to 1980. Gains tended to taper off in the middle and upper elementary grades (5 to 8) and they seemed to decline during the high school years.

Can one estimate trends for adult literacy? Can we say that more progress has been made by some groups than perhaps by others? Without the availability of national test data, one can do so with less confidence. Yet, because of the importance of such knowledge, I will hazard a guess. I will use for estimating trends, the three major groups of adults seeking literacy. The first is the group that is totally illiterate - (Up to 4th grade reading levels). The second is the one classified as functionally illiterate, able to read somewhat but unable to use reading and writing for purposes beyond minimal survival and coping, (4th to 8th grade reading levels). The third group is composed of the "new illiterates," those who have the "survival" functional literacy but who lack a high school graduate level that is more functional for a technological society.

Historically, the need for basic literacy was recognized and provided for first; functional literacy was a later concern; and the latest is the concern for the newer and higher literacy.

The trends for adult seem to vary by levels, as they do for the school age population. The greatest improvements seem to be at the basic literacy level. There has been a steady decline in total illiterates, as seen in the numbers of adults who have completed less than five years of schooling. The 1980 census shows a decline as compared to the 1970 census.

The next larger gains, I believe, have been among those classified as functional literates, with larger numbers of adults completing 8th grade in 1980 than in 1970.

The greatest problems exist among the "new illiterates," those whose abilities and skills, although substantial and even above the average adult level of 50 years ago, are not sufficient in a world that continues to become more complex and requires from its workers a literacy that implies not only taking information off the page, but making inferences, reasoning critically, and the like. Thus it would seem that the literacy needs among adults as among students of school age have some parallels - the greater needs are at the higher levels.

The National Academy of Education Reading Committee Report, Toward a Literate Society, (Carroll and Chall, 1975) suggested similar needs. A 12th grade reading level, they suggested, is essential literacy for today. It implies an ability to read The New York Times or a newsmagazine such as Time, critically and analytically. It is interesting to note that the job related needs recommended by Sticht and Mikulecky are the same.

Although no one seems to know for sure what numbers of illiterates fall within these three groups, I think the numbers suggested by Renee Lerch of the Network have some merit - 1 million estimated for the basic literacy group, 23 to 26 million for the functional literates, and 51 million for the "new illiterates."

That modern man and woman, whether at work or as a citizen, needs more than the coping and survival skills of functional literacy was made evident to me when I served as expert consultant in two class action lawsuits. Both concerned a mismatch between the readability levels of federal housing contracts and notices about food stamps and the limited reading abiltiy of those for whom they were written.

The readability levels of the contracts and notices were on about a college level while the persons for whom they were intended could read only on an average, on a functional literacy level--about a 7 to 8th grade level.

There has been a considerable effort during the past several decades to make documents more readable for the millions of adults with limited reading abilities. But the problem is far from being solved. And it seems likely that the problem cannot be solved fully through simpler documents, for the nature of the content makes it difficult to lower the readability too much. To illustrate this problem, I present an excerpt from a notice on divestiture that I received a few days ago from the New England Telephone Company. A readability check places the excerpt on about a 9 - 10 grade level. Since 95 per cent of households in New England have a telephone and received this notice, we can estimate that for about 30 or 40 per cent it might as well have been written in Greek or Latin.

If your phone isn't working, it's important to determine whether the problem is in the telephone line or in the equipment.

Diagnosing the Problem

- If the phone has an obvious problem, like a broken dial, frayed cord or crack in the plastic housing or handset, call telephone equipment repair at 1 800 555-8111 for replacement.
- Try another phone in the same jack outlet to see if it works.
- If you have only one phone, unplug it and take it to a neighbors and try it there.
- If you have only one phone and it's NOT connected to a modular clip-ended outlet, call 1 555-1611 for instructions.

If the problem is in the telephone line to your home, our repair technicians will test it out and put it back in service.

When you call the equipment repair center, specially-trained attendants will offer you various options for exchanging your broken phone for a working model.

What's Behind the Change?

This important change in our operations is a result of the divestiture of New England Telephone from American Telephone & Telegraph on January 1.

Thus, it would appear that for work, for citizenship, and for personal survival a literacy level on at least a 12th grade level is essential. What is it about a 12 grade level that makes it a challenge to both high school students and adults? This level requires a great deal. It means extensive general and specialized vocabularies, considerable background knowledge, ability to reason, and to think critically. Also necessary are efficient reading and study skills, an efficient rate of reading, and strategies for gaining ideas from what is read. A 12th grade reading level means the ability to use reading to solve problems as well as to learn from texts. Put in these terms it is easier to understand why moving from an elementary to a high school level (from Stages 3 to 4) is a considerable challenge, requiring much reading of difficult materials of a great range of material, subject areas, and types, as well as direct instruction.

That many high school graduates do not meet this level of literacy is evident from the National Assessment scores, scores on the SAT, and on the major standardized achievement tests.

In light of the need for a 12th grade level of literacy, it is of interest to find that, on the average, lower levels are used as standards of minimum competency by many states. Analysis of eight tests of minimum competency in reading for Grade 11 published in the late 1970's , (half developed by state departments of education and half by publishing firms) revealed a wide range of reading ability needed to "pass"-- from

a 5-6 grade level to an 11-12 grade level, with most of the texts requiring about a 7-8 reading grade level, (Chall, Freeman & Levy, 1982).

The maturity of the reading selections and the cognitive processing required also were more charateristic of the reading of the upper elementary grades - not the high school level.

Reading Disability, Dyslexia and Learning Disabilities

There is still another problem area that is of importance in a consideration of the status of adult literacy--that of severe difficulty in learning to read called by various names--reading disability, dyslexia and learning disabilityies. Various government committees basing their estimates on a long history of research have reported that about 10-15 percent of children and adults have severe difficulty in learning to read (Carroll & Chall, 1975).

Recent studies and clinical reports indicate that while many of these students tend to drop out of school earlier than those without problems, increasing numbers stay in school and many continue on to college.

I have often wondered why the literture on adults seeking literacy - at all three broad literacy levels - are seldom seen as having severe problems. Indeed the recent research on severe disability and dislexia which focuses on the neurological bases of severe difficulty seems not to be considered as a factor in adult reading. Is it possible that these severe problems which usually require diagnosis and individualized instruction disappear when these students leave school? The research would indicate otherwise. It would seem to me that the research on reading disability is relevant to that of adult literacy.

At the same time, it should be recognized that those with severe reading disability can learn to read. There is considerable research indicating that they can. Although popular opinion, including that of many educators, is that if those with reading problems have not learned by high school, they will never learn, the research indicates significant gains from remedial instruction. Comparisons with control groups indicate that there are immediate and long-term gains when remedial treatment is given (Smith, 1979). Remedial programs in community and 4-year colleges are also effective (Cross, 1981).

Research and the Uses of Research

It would seem that learning to read, whether as a child or adult, have many similarities. Adults may be able to move faster at the basic illiteracy stage, but the pace tends to slow down when they reach the functional literacy and problem solving stages.

Since the development of literacy among school age students has a longer history and a richer research base, it would seem to me that much can be used from this research and experience to the advantage of adult literacy.

I am aware that the suggestion may be met with some anxiety by many adult educators who have sought to separate themselves from childhood education. The desire to separate stems, I believe, from a realistic base. For too long elementary school teachers, and particularly teachers of first grade, were the

teachers of adults in basic literacy classes with no special training in the psychology of the adult and in their special needs. Few special adult materials were available.

There are now more appropriate materials. But is the knowledge from the school based reading field used to help solve the adult problems? My impression is that there may still be a hesitancy stemming from a sensitivity, an empathy, not to insult the adult learner. There seems to be a particular sensitivity about using standardized tests. One wonders how it is possible to measure progress or lack of progress, and how one can plan individual programs without such tests.

There is a particular need also for diagnostic tests in adult programs. Unless it is known what the needs are by level, and the strengths and weaknesses of specific components of literacy, it would be difficult to accomplish one's task.

Some other of the recent findings in reading research would, I think, also help adults. I can mention only a few. First, the value of wide reading, particularly at levels beyond basic literacy. Recent research shows that wide reading contributes to higher reading scores and to higher language development (Chall and Snow, 1982). Second, students seem to benefit from challenging levels of instructional material from which they receive teacher instruction. Recent studies seem to indicate that materials that are easy in realtion to student reading ability are less effective. (Chall, Conard, Harris, 1977; Chall, Conard, Sharples, 1983)

There is a great need for research on adult reading.

One of the first topics should, I think, be the relation between adult and child reading on different reading levels. Is the length of time required the same for both? Do they differ in the kinds of errors, and in their strengths and weaknesses? Is the amount of direct instruction needed the same? Are the independant reading needs the same for adults and children at similar levels?

Research is especially needed on how more students and adults can be brought to a 12th grade level. Is it possible that some students and adults may not be able to achieve it? Or more possibly, with what kind of help and programs can it be achieved? Can those of normal cognitive functioning make it, if given the proper amounts and kind of instruction? It seems that too many do not, at the present.

This brings me to my final but perhaps most important point on research needs. We need to know more, for both adult and school-age populations, about the influence of cognition on reading and the influence of reading on cognition. Descriptions of the higher stages of reading, particularly, are descriptions of higher levels of reasoning. This relationship has been known a long time. (E.L. Thorndike, 1972; R.L. Thorndike, 1974-75). Both Thorndikes characterized reading comprehension beyond the decoding stage, as reasoning, related as highly to tested intelligence as to other reading comprehension tests. If reading is reasoning, is it possible to enhance mental ability through training in reading? The findings here are somewhat contradictory (Luriia, 1976; Scribner and Cole, 1981) but it would seem to be important to pursue the question for solving our present educational problems, for improving our economic productivity, and for coping with our social and human problems.

Epilogue

I have taken the position that higher levels of literacy are presently needed and will be needed in the future by more and more adults to meet the demands of work as well as of citizenship and personal needs.

But there is also growing evidence that while many jobs require higher levels of literacy than in the past, the greatest increases in employment are occurring in service jobs that seem to require lower levels of literacy. What this means for literacy standards is hard to tell. I would think that it does not mean that we can relax, for many of these service jobs are entrance jobs from which one can move on up, particularly if one is already prepared with higher skills. If adults will be having more than one career, as we are being told, it would seem to be beneficial to both the individual and to society to have the more advanced literacy skills needed for the higher level jobs, and for a fuller life.

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