DOCUMENT RESUME

ED 258 146 CS 008 054

AUTHOR Guthrie, John T.; Kirsch, Irwin S.
TITLE What Is Literacy in the United States? Reading Competencies and Practices. Technical Report #5.
INSTITUTION International Reading Association, Newark, Del.
SPONS AGENCY Army Research Inst. for the Behavioral and Social Sciences, Alexandria, Va.
PUB DATE Feb 83
CONTRACT MDA-90381C-0446
NOTE 28p.
PUB TYPE Information Analyses (070)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Functional Literacy; *Literacy; *Literacy Education; *Reading Ability; Reading Comprehension; Reading Difficulties; *Writing Skills

ABSTRACT

Growing scientific literature provides a perspective of literacy that is at variance with traditional points of view, which see literacy as a unitary, dichotomous, psychological capability that is learned with the appropriate educational opportunity. However, an individual is not easily categorized as literate or illiterate. While the goal is to ensure that every adult will be able to understand all printed materials likely to be encountered in everyday life, it is unreasonable to suppose that there is one measure of a unitary competency that can be partitioned into two levels to divide literates from illiterates. Attempts of this sort ignore the pluralism of the social and occupational conditions in which people live, the diversity of uses for reading, and the variability of demands for literacy within the United States. A better question is, "Do people exhibit activities and competencies that satisfy the demands for literacy in their social contexts?" The answer to this question requires (1) a description of the demands for literacy within defined social situations, (2) the competencies needed to meet these demands, and (3) the activities or practices of literacy. These sets of information may be juxtaposed to observe the degree of correspondence between the profile of demands and the profile of activities for literacy in a person or group. This correspondence provides a basis for determining the nature and extent of literacy. (EL)

Reading Competencies and Practices

What Is Literacy in the United States?

John T. Guthrie and Irwin S. Kirsch

February 1983

Technical Report #5

The research reported herein was supported in part by the Army Research Institute Contract No MDA 90381C 0446.

The views, opinions, and findings contained in this report are those of the author(s) and should not be construed as an official position, policy, or decision of either the Department of Defense or the International Reading Association unless so designated by other official documentation.

Research Department
International Reading Association
800 Barksdale Road, PO Box 8139
Newark, Delaware 19714, USA
(302) 731-1600

What Is Literacy in the United States?

John T. Guthrie

Irwin S. Kirsch

International Reading Association

Since 1970, alarms have been sounded in many quarters to alert the public that there is a "reading problem" in the United States. This dilemma has been characterized in different ways by various groups, including educational, governmental, and corporate leaders. In attempting to define the extent of the problem, many leaders and writers have asked: "How many illiterates are there in America?" The numbers that have been contained in answers to this question imply a serious crisis. Although we do not disbute the claim that there may exist a "reading problem," we submit that the nature and extent of the problem remain unknown. We believe that the perspective which has been used by educational researchers to formulate the problem is based on a set of assumptions concerning the nature of literacy which are not well supported by available evidence. As

---

The writing of this paper was supported in part by Army Research Institute Contract No. MDA 90381C 0446. The opinions contained herein are those of the authors and not those of the Department of Defense or the International Reading Association.

a result, continued focus on the question of "How many . . ." which is grounded in this perspective will continue to lead to inappropriate evaluations of adult and student literacy and inefficient educational programming. A new perspective, one more suited to our current understanding of literacy in society, merits consideration.

The Traditional Perspective

A variety of disciplines participate in the continuing symposium on literacy. Among the participants are included humanists (especially English professors), publishers of all kinds, journalists who occasionally find the topic sensational, and educational researchers. It is the latter group, educational researchers, who are in a position to inform government and lead education. Yet this group promotes a traditional perspective which is at variance with a growing scientific literature.

In this discussion, literacy refers to the processes of reading and writing. The term has often been applied more inclusively. For example, an editorial in Science, stated that the scientific literacy of Americans should be improved. In this context, literacy was synonomous with knowledge. Another abuse of the term occurs when literacy is stretched to include mathematical abilities or attitudes toward education. We will resist those extensions here, but will emphasize the reading aspect of literacy since, regrettably, it has been more widely

studied than writing.

The view of literacy perpetrated by many social scientists and often adopted by the public has three characteristics. First, literacy is a feature of the person. As a characteristic of an individual, it is a psychological capability that is learned with the appropriate educational opportunity. Second, this capability is unitary. Literacy is expressed in the singular and people seldom discuss the notion of multiple literacies. Third, literacy is considered to be dichotomous. A person either has acquired literacy or he has not. The inverse, illiteracy, is an egregious condition which can be removed with the proper training, materials, and incentives. Once acquired, literacy is usually assumed to be permanent and general. It is an ability which applies broadly to all contexts.

The traditional view of literacy has been presented by Hunter and Harman in their book entitled Adult Illiteracy in the United States, which is one of the more thorough analyses of reading difficulties and educational programs designed to ameliorate them.[13] In their study, an illiterate was defined as someone who had not graduated from high school. In their words, "In the United States, as noted above, completion of secondary school has become a kind of benchmark definition of functional literacy" (p. 27). Their use of the term functional literacy is not distinguished from literacy for their primary purposes.

Throughout their discussion, Hunter and Harman claim that illiterates, i.e.,those who do not have a high school diploma, are "those persons in our society who lack sufficient reading and writing skills to function effectively" (p. 31).

Hunter and Harman construe literacy as a capability, that is, the learned achievement of reading and writing. Their indicator of this capability is dichotomous. An individual has completed high school or he has not; he has acquired literacy or he has not. Further, this dichotomous capability is unitary in the sense that there seems to be only one literacy which is a combination of reading and writing. There is no suggestion that there may be more than one literacy for different types of people or different types of circumstance.

One widely publicized critic of education for literacy is Paul Copperman. His work entitled The Literacy Hoax argues that there was a decline in literacy at the elementary and secondary school level from 1964 to 1973.[4] Irrespective of whether his argument is true, his view of literacy is traditional. He used the Metropolitan Achievement Test, the Stanford Achievement Test, and the Comprehensive Tests of Basic Skills as his operational definition of literacy. Needless to say, these are measures of reading achievement, consisting of narrative and expository paragraphs followed by multiple choice questions, normed on national samples. It goes without saying that these tests are

administered individually to children. A score is obtained for each person which describes his or her reading achievement. Therefore, reading is a personal, psychological characteristic which can be expressed in a single score. An individual's score related to other persons the same age can be used to define reading failure or illiteracy. The dichotomous quality of Copperman's view of literacy is obvious. As he sees it, a child has succeeded or failed; schools have improved or declined. Although he does admit to shades of improvement and/or increasingly substantial declines, the three features of the traditional view prevail in his book.

The pages of the Phi Delta Kappan have been subject to the traditional perspective. In December 1981, Barbara Lerner expressed herself on literacy.[20] To justify the use of vouchers for education, she claimed that there is a need for the improvement of literacy. In attempting to substantiate the crisis in basic education, Lerner presented statistics about the percentage of Americans who are apparently illiterate. Her operational definition of literacy, delineated in a previous article from the American Psychologist, was based on the functional literacy test from the National Assessment of Educational Progress. With several adjustments to the data, she concluded that, "A conservative estimate of the true rate of illiteracy among 17-year-olds in America in 1975, a year before

the minimum competence movement picked up real momentum, would be about 20%" (p. 1059).[19]

The National Assessment of Educational Progress report of their functional literacy test data, on which Lerner heavily relies, conforms to the traditional view of literacy. According to the technical report, the test was based on "examples of basic everyday reading tasks" (p. 3).[26] These contained information from telephone books, encyclopedias, safety notices, and newspaper articles. There were 64 items administered to a national sample of 17-year-olds. The results of the entire sample were adjusted upwards to account for the unnecessary difficulty in many of the items. In the final analysis in 1974, the mean percentage of the 17-year-olds responding correctly to the items was 89.7%. It should be noted that Lerner's conclusions do not follow from these data since NAEP reports the average of the proportions of the population that score correctly on the items, but not the proportion of the population that passed some cut-off score on the test. Irrespective of that issue, both the NAEP test developers and Lerner, among others who rely on it, promulgate the view that literacy, measured by reading achievement, is a unitary capability that a person either does or does not possess.

The Chronicle of Higher Education has carried articles that subscribe to literacy in the traditional view. One article by

Watkins outlined some adult basic education programs offered by colleges and universities.[36] The justification for these programs was based on high rates of illiteracy which were reported from the Adult Performance Level Project in which approximately 20% of American adults were declared to be functionally illiterate. Discounting the fact that the test used in the Adult Performance Level Project contained items of forms, tables, and regulations which have little relationship to textbooks, the assumption that reading is individualistic, singular, and dichotomous was pervasive.

The study of illiteracy by Norvell Northcutt at the University of Texas is perhaps the most widely cited effort of its type.[28] In his Adult Performance Level Project, a set of items such as completing an income tax form, reading a bus schedule, and planning a trip was compiled. The population of individuals to whom these items were administered was then divided into three groups based on a composite of income, education, and occupation. The upper group earned more than $15,000, had college educations and managerial or professional positions; whereas, the lower group generally earned less than $5,000, had unskilled positions, and had not completed high school. Approximately 20% of the population fell into the latter category; whereas 35% were in a middle category and 46% were in the upper group. The set of items was given to all three groups

and it was found that the bottom group performed worse than the other two. From these data, Northcutt concluded that about 20% of the American population is functionally incompetent.

Upon close examination, Northcutt's logic does not lead directly to his conclusion. The figure of 20% was obtained from income and education, not from reading performance. Notwithstanding the shortcomings of Northcutt's inferences, the perspective on literacy promoted by his study is traditional. There is a single set of reading items which produced one score for one person; this person was designated as functionally incompetent, functioning with difficulty, or functionally competent.

It should be noted that Rudolf Flesch, who recently attempted to explain "why Johnny still can't read' in a book by that title assisted in fueling the traditional view.[8] He quoted Northcutt's study by saying that, "21.7% of adults couldn't read a want ad, job application form, a label on a medicine bottle, or a safety sign at a workplace." Needless to say, these were not Northcutt's actual findings. However, Family Circle readers who swallowed a digested version of Flesch's message were no less willing than others to embrace the traditional view.

A Social Interaction Perspective

Studies of communication have recently issued from many disciplines. As one form of communication, reading has been

embraced in many of these explorations. From cognitive psychology to anthropology and literary criticism, communication and thus reading is seen to be conditioned by the social context in which it occurs. A person reads with certain cognitive processes but also with certain expectations and purposes. These uses for reading relate to the reader's contract with the author, the reader's occupational, educational, or personal reasons for reading, and the societal needs that are met by the individual's act of literacy. The enormous complexity of social context and personal expectation lead to a broad diversity in reading. People read different materials in different ways for different purposes, and this multiplicity seems likely to lead to a broad range of reading competencies.

The forms that literacy takes and the functions it serves for individuals, communities, or nations are as diverse as the cultural or historical contexts in which they are considered. However, a theme amid this variation has been articulated by Scribner and Cole based on their studies of literacy in a variety of cultures.[31] They say that,

> As the technology of a society becomes more complex and it becomes more closely integrated into world affairs, we can expect the number and variety of literacy practices to increase, bringing with them new skills or more complicated versions of old skills. (p. 258)

The literacies that people need to maintain and expand the groups in which they live must necessarily expand as their aspirations are heightened.

Scribner and Cole conducted ethnographic and experimental studies of reading and writing among the Vai of Liberia. Qualitatively different forms of literacy were discovered. One type involved reading the English alphabet which was a language foreign to the Liberians. This literacy was learned in school and was used to acquire subject matters, hold jobs, and increase modernization. A second form of literacy involved reading an indigenous Vai script which was learned in tutorial sessions outside of school. This script was used to write letters to keep track of one's own affairs and maintain the local traditions. A third form of literacy entailed reading Arabic for the purpose of memorizing passages of the Koran and maintaining the Islam culture. Each of these literacies was enjoyed by different groups emerging from distinctive social contexts and serving to perpetuate contrasting and sometimes conflicting community and religious systems. It is obvious that an individual Vai could not be classified as literate or illiterate. Rather, a person could be described as literate within a certain social-religious group for a particular script that was used for restricted purposes.

Embedding literacy in the social matrix presents a challenge

to scholars who seek to understand the nature of literacy. As Stubbs[34] has observed in his work on the sociolinguistics of reading and writing,

> Any writing system is deeply embedded in attitudinal, cultural, economic and technological constraints, and these pressures are particularly powerful in the case of an international language like English. Reading and writing are therefore also sociolinguistic activities. People speak, listen, read and write in different social situations for different purposes. . . . If a coherent theory of literacy is to be developed it will have to account for the place of written language, both in relation to the forms of spoken language, and also any relation to the communicative functions served by different types of language in different social settings in our culture. . . . I do not see that a theory of literacy can avoid discussion both of how written language works, and also of what it is used for. (pp. 15-16)

When a person confronts a segment of written language, the person encounters a social matrix. The choice of whether to read, when to read, how to read, or what to read for are in part social choices. To read at all is to form some sort of social contract with the author. Whether the piece is a textbook, a magazine article, or an advertisement, it has an author who may be believed or disbelieved, accepted or rejected. The segment of

written material is read in a social context such as school, work, or leisure. The reader may have compacts with the teacher, employer, parents, peers, or others which may condition the act of reading. By choosing to read a segment of text, the person enters the group of individuals who comprise the readership of this text and with whom future communication becomes possible. Reading, then, although it may at first seem to be solitary, is no more so than listening to a presidential address, commuting in an urban center, or learning a professional occupation.[22]

In addition to cultural contrasts, historical comparisons by Graff[9] and others have illustrated the social basis of literacy. As Resnick and Resnick pointed out, literacy in its earliest form consisted of little more than being able to sign one's name.[29] Later, during the Reformation in Europe, minimum competency in reading was considered to be shown by a recitation of the Catechism or a common prayer. This information was deeply memorized and reading consisted of little more than chanting to print. In 19th century Europe and America, public schooling introduced a new criterion for literacy. Students were expected to become fluent oral readers capable of rendering novel text into exquisite elocution. However, comprehension was not considered. It was not until the 20th century that the goal of reading for the purpose of gaining new information emerged. Today this criterion is widely used in elementary schools. The

ability to understand an unfamiliar text and derive meaning or entertainment from it is broadly assumed as a necessary condition for literacy. Increases in the standard of literacy through these historical periods lead to the conclusion that literacy is not a static characteristic of an individual which is indifferent to economic and political characteristics of the environment.

Currently in the United States, educational programs are designed to improve literacy at many levels. For example, hundreds of community colleges have initiated programs to improve basic reading and study skills of students. These programs are developed not as a luxury but as a necessity for enabling sizable proportions of students to learn from their textbooks. The existence of these programs combined with their enrollments by students and financial support by universities testifies to the literacy dilemma. Students who have read efficiently and competently enough to graduate from high school do not read efficiently and competently enough to read college textbooks to the satisfaction of the faculty. In other words, people who may have been considered at least minimally literate in one circumstance (high school) are now justifiably seen as illiterate in another setting (the college course).

The social environments defined by school and work have been observed to contain different literacy demands. In some cases these different types of reading demands have been shown to be

associated with different sets of cognitive strategies or reading behaviors. Apparently an individual is not easily categorized as illiterate or literate. The environment, the social expectations, and the reading activities that others may expect are pivotal in determining whether the person is literate.

Diversity of Purpose, Material, Competency

When reading and writing activities are placed in a social perspective, diversity becomes their hallmark. First, there are many purposes for reading and writing. These purposes lead to a plethora of materials consisting of qualitatively different forms of written language. Distinctive reading competencies are needed to use these contrasting materials for the full range of purposes to which they may be applied. A person's degree of literacy may be gauged by the extent to which prevailing demands encountered by the person are met by existing competencies. The match or mismatch between demands and competencies determines whether a person is literate or illiterate.

Variation of purposes in different contexts and for different participants in literacy has been observed and recorded. For example, in the high school curriculum, teachers' purposes for homework reading have been examined by Lunzer and Gardner.[23] He found that English teachers most frequently expect students to read to prepare for a discussion; math and science teachers expect reading will enable students to answer assigned questions;

and social studies teachers use reading primarily to follow up lessons. (Student purposes for different subject matters were not well aligned with teacher purposes.) In community colleges, according to Richardson, teachers frequently expected students to read in order to reiterate, duplicate, or enrich the classroom lectures and instruction. Reading assignments were designed to be redundant with oral communication.

The prevailing purposes for reading in school may be distinguished from those in occupational settings. According to a survey by Mikulecky, learning prevailed as a purpose in both high school and technical school settings.[24] However, in occupational contexts, learning was never the most frequent purpose. In jobs designated as blue collar, reading to do things were most frequent; whereas, in professional occupations, purposes were dominated by reading activities that combined doing and learning. In high technology occupations, Miller reported that 15 different purposes for reading were identified, including knowledge acquisition, writing up technical descriptions, editing reports, and advising customers.[25] Clerical positions in one particular industrial setting observed by Crandall were found to emphasize the purposes of reading to classify documents into certain categories and searching to locate specific information.[5]

Diversity of purposes for reading in community settings was

systematically studied by Heath.[12] She found that reading in Appalachian communities provided social, instrumental, and archival uses that were quite different from school-oriented uses for literacy. In addition, Gray proposed, in 1956, that there were 13 basic purposes, including: (1) reading as a ritual, (2) from a sense of duty, (3) to fill in time, (4) to understand current happenings, (5) for immediate personal satisfaction, (6) to meet practical demands of daily living, (7) to further avocational interests, (8) to promote vocational interests, (9) to meet personal-social demands, (10) to meet citizenship needs, (11) for self-improvement, (12) to satisfy intellectual demands, (13) to satisfy spiritual needs.[10] He reported that adults typically read for a restricted range of purposes and that people differed from one another markedly. Certainly, one taxonomy has not been located nor seriously proposed; and the full diversity of purposes has probably yet to be disclosed. However, to the degree that purposes for literacy are diverse, competencies for literacy, either desired or required, may likewise be heterogeneous.

As the uses for literacy are pluralistic, a profusion of materials should be expected. In a study of individuals in 100 occupations ranging from vice president of a large corporation to assembly line workers and stonecutters, Diehl and Mikulecky found a variety of materials.[7] Small pages of text were used more

frequently than charts which were in turn used more frequently than a portion of a book or an entire book. Among high technology workers, Miller reported that the leading materials were technical reports, proposals, handbooks, data sheets, and memos.[25] Industrial jobs were dominated, according to Jacob, by forms, followed by tables, books, and manuals.[14] Finally, reading in community college settings includes not only textbooks and classroom notes but also institutional processing materials. Richardson found that gaining admission, securing financial aid, becoming enrolled in classes presented literacy demands that could not be met by many non-traditional students.[30] Access into institutions of higher learning may sometimes require more exacting types of literacy than the process of higher education itself.

The conceptual framework for understanding the diversity of reading competencies is based on the notions of purposes and materials. A person who holds a distinctive purpose for a certain type of material will engage an appropriate competency to fulfill the goal. To the extent that purposes and materials vary, competencies must also vary if literacy is to occur.

Two traditionally measured competencies are vocabulary knowledge and text comprehension.[15, 6] As Anderson and Freebody report, these competencies are consistently correlated but nevertheless considered for many reasons to be distinctive

aspects of reading.[2] Within text comprehension, Kintsch has recently shown that there are at least two independent competencies.[16] One of these consists of sentence comprehension which can be measured with cloze tasks. A second independent level is passage understanding which may be measured by free recall or general inferential questions. Trabasso and others have shown that several types of inferences may play distinctive roles in comprehension.[35] Furthermore, a distinction between text comprehension and searching a manual has been shown to meet statistical and information processing criteria for independence.[11, 18] Critical evaluation of text as measured by writing tasks may also qualify as a distinctive type of literacy competence.[27] We suggest not that this list of competencies is accurate or complete; but that the study of diversity in reading competence is a high priority for fundamental reading research.

Alignment of Literacy Demands and Competencies

If literacy is both a consequence and a component of a person's social milieu, it is reasonable that the demands for literacy will vary as the social context changes. From this perspective, an individual's degree of literacy depends upon how fully the nature and extent of his competencies fulfill the demands that originate in the environment or personal aspiration. To appraise whether a person is literate, the demand

of the environment for literacy must be assessed.

One provocative attempt to compare competency to demand for literacy was made by Acland.[1] He suggested, based on a broad national sample of data, that the literacy of people varies with income. For example, he showed that 75% of a national sample of individuals with $15,000 or more of income have flown on an airplane at least once. In turn, 78% of a different sample drawn from this population performed successfully on a task of reading airline schedules. However, only 35% of the population earning under $5,000 had ever flown; 53% of this group succeeded on the airline schedule reading task. Therefore, Acland argues, both groups were sufficiently literate to meet the demands placed upon them, although the incidence of literacy was different for them.

A similar analysis was made for checking accounts. Although 86% of the population over $15,000 owned a checking account, only 67% was able to fill in a deposit slip correctly in a nationwide test. However, although 46% of individuals under $5,000 owned a checking account, 45% performed the reading task associated with a deposit correctly. In this case, the literacy demand was met for the low income population but not for the high income group. These findings point to the possibility that individuals with higher incomes or more complex occupational responsibilities may face higher literacy demands and need a higher level and broader scope of literacy.

Literacy demands apply to students as well as employed adults. The competence of students to meet the demands placed on them has been frequently maligned but rarely studied. Exceptions include a report by Sherrell who showed that vocational education students in high school were obliged to struggle with textbooks that exceeded their reading ability by three to six grade levels.[32] In addition, Sticht suggested that reading demands in military jobs vary from eighth grade for cooks to 16+ grade for supply specialists.[33] These studies indicate that alignment is a challenge for people at many levels of competence.

The need for such an alignment has been introduced by one team of social scientists. In 1975, John Carroll and Jeanne Chall wrote a report for the National Academy of Education on the reading problem in America.[3] They stated that,

> The literacy requirements for satisfactory functioning of an individual in our society are not known with any precision, but they are certainly far above the level of minimal literacy. We take the position that the "reading problem" in the United States should not be stated as one of teaching people to read at the level of minimal literacy, but rather as one of ensuring that every person arriving at adulthood will be able to read and understand the whole spectrum of printed materials that one is likely to encounter in daily life. (p. 9)

Although this position is debatable for several reasons, its relativism represents an insight ahead of its time. Other writers, including Hunter and Harman, Gray, Levine, and Sticht, have recognized the contextual nature of literacy.[13, 10, 21, 33] However, they have adopted an operational definition of literacy, such as a test score or grade level, to answer the question of how many illiterates exist in a given population. As a consequence, their discussions obscured the social conditions of literacy and sustained the traditional view.

Next Steps

The traditional perspective gives rise to a frequently posed question: "How many illiterates are there in the United States?" Answers ranging from 3% to 20% have been proposed.[17] Such data are forwarded as a characterization of the literacy problem and as justification for certain types of remedial or basic education. However, since the question itself is grounded in the assumptions of the traditional view as outlined in this paper, the answers to it must be treated with a degree of caution that is commensurate with our present doubts about the traditional perspective. It is unreasonable to suppose that there is one measure of a unitary competency that can be partitioned into two levels to divide literates from illiterates. Attempts of this sort ignore the pluralism of the social and occupational conditions in which people live, the

diversity of uses for reading, and the variability of demand for literacy within the United States (not to mention the world).

An alternative question, one that is more faithful to what is known about literacy, is: "Do people exhibit activities and competencies that satisfy the demands for literacy in their social contexts?" The answer to this question requires: (1) a description of the demands for literacy within defined social situations; (2) the competencies needed to meet these demands; and (3) the activities or practices of literacy. These sets of information may be juxtaposed to observe the degree of correspondence between the profile of demands and the profile of activities for literacy in a person or group. This correspondence provides a basis for determining the nature and extent of literacy.

Defining literacy in terms of its social context makes it possible to reconcile the accomplishment of a farm worker who exclaimed, "Now I will preserve my self-respect," when he learned to read a stop sign, with the exasperation of Goethe who said at the end of his life, "The dear people do not know how long it takes to learn to read. I have been at it all my life and I cannot yet say I have reached the goal."

References

1. Henry Acland, "If Reading Scores Are Irrelevant, Do We Have Anything Better?" Educational Technology, July 1976, pp. 25-29.

2. Richard C. Anderson and Peter Freebody, "Vocabulary Knowledge," in John T. Guthrie, ed., Comprehension and Teaching: Research Reviews (Newark, Del.: International Reading Association, 1981), pp. 77-117.

3. John B. Carroll and Jeanne S. Chall, eds., Toward a Literate Society: The Report of the Committee on Reading of the National Academy of Education (New York: McGraw-Hill, 1975).

4. Paul Copperman, The Literacy Hoax: The Decline of Reading, Writing, and Learning in the Public Schools and What We Can Do About It (New York: William Morrow, 1978).

5. Jo Ann Crandall, "Functional Literacy of Clerical Workers: Strategies for Minimizing Literacy Demands and Maximizing Available Information," paper presented at the annual meeting of the American Association for Applied Linguistics, New York, December 1981.

6. Frederick B. Davis, "Psychometric Research on Comprehension in Reading," Reading Research Quarterly, 1972, pp. 628-678.

7. William A. Diehl and Larry Mikulecky, "The Nature of Reading at Work," Journal of Reading, December 1980, pp. 221-227.

8. Rudolf Flesch, Why Johnny Still Can't Read: A New Look at the Scandal of Our Schools (New York: Harper & Row, 1981).

9. Harvey J. Graff, ed., Literacy and Social Development in the West: A Reader (Cambridge, Eng.: Cambridge University Press, 1981).

10. William S. Gray and Bernice Rogers, Maturity in Reading: Its Nature and Appraisal (Chicago: University of Chicago Press, 1956).

11. John T. Guthrie, "Reading and Cognitive Processing: Two Categories," paper presented at the annual convention of the International Reading Association, New Orleans, May 1981.

12. Shirley Brice Heath, "The Functions and Uses of Literacy," Journal of Communication, Winter 1980, pp. 123-133.

13. Carman St. John Hunter and David Harman, Adult Illiteracy in the United States: A Report to the Ford Foundation (New York: McGraw-Hill, 1979).

14. Evelyn Jacob, Literacy on the Job: Final Report of the Ethnographic Component of The Industrial Literacy Project (Washington, DC: Center for Applied Linguistics, June 1982).

15. Walter Kintsch and T. A. van Dijk, "Towards a Model of Text Comprehension and Production," Psychological Review, 1978, pp. 363-394.

16. Walter Kintsch and J. Craig Yarborough, "Role of Rhetorical Structure in Text Comprehension," Journal of Educational Psychology, December 1982, pp. 828-834.

17. Irwin S. Kirsch and John T. Guthrie, "The Concept and Measurement of Functional Literacy," Reading Research Quarterly, 1977-1978, pp. 485-507.

18. Irwin S. Kirsch and John T. Guthrie, Prose Comprehension and Text Search as a Function of Reading Volume, unpublished manuscript, International Reading Association, 1982.

19. Barbara Lerner, "The Minimum Competence Testing Movement: Social, Scientific, and Legal Implications," American Psychologist, October 1981, pp. 1057-1066.

20. Barbara Lerner, "Vouchers for Literacy: Second Chance Legislation," Phi Delta Kappan, December 1981, pp. 252-255.

21. Kenneth Levine, "Functional Literacy: Fond Illusions and False Economies," Harvard Educational Review, August 1982, pp. 249-266.

22. Morris M. Lewis, The Importance of Illiteracy (London: George G. Harrap & Co., 1953).

23. Eric Lunzer and Keith Gardner, eds., The Effective Use of Reading (London: Heinemann, 1979).

24. Larry Mikulecky, "Job Literacy: The Relationship between School Preparation and Workplace Actuality," Reading Research Quarterly, 1982, pp. 400-419.

25. Phyllis A. Miller "Reading Demands in a High-technology Industry," Journal of Reading, November 1982, pp. 109-115.

26. National Assessment of Educational Progress, Functional Literacy: Basic Reading Performance: A Brief Summary of An Assessment of In-School 17-Year-Olds in 1974 (Washington, DC: National Right to Read Effort, 1975).

27. National Assessment of Educational Progress, Reading, Thinking and Writing: Results From the 1979-80 National Assessment of Reading and Literature (Denver: NAEP, October 1981).

28. Norvell Northcutt, Adult Functional Competency: A Report to the Office of Education Dissemination Review Panel (Austin: University of Texas, Adult Performance Level Project, March 1975).

29. Daniel P. Resnick and Lauren P. Resnick, "The Nature of Literacy: An Historical Exploration," Harvard Educational Review, August 1977, pp. 370-385.

30. Richard C. Richardson, Jr., A Report on Literacy Development in Community Colleges, NIE-400-78-0061 (Tempe: Arizona State University, May 1982).

31. Sylvia Scribner and Michael Cole, The Psychology of Literacy (Cambridge, Mass.: Harvard University Press, 1981).

32. Eugene G. Sherrell, "Long-Neglected Factor: Reading Ability Of Vocational Students," Phi Delta Kappan, October 1981, pp. 140-141.

33. Thomas G. Sticht, ed., Reading for Working: A Functional Literacy Anthology (Alexandria, Va.: Human Resources Research Organization, 1975).

34. Michael Stubbs, Language and Literacy: The Sociolinguistics of Reading and Writing (London: Routledge & Kegan Paul, 1980).

35. Thomas Trabasso, "On the Making of Inferences During Reading and Their Assessment," in John T. Guthrie, ed., Comprehension and Teaching: Research Reviews (Newark, Del.: International Reading Association, 1981), pp. 56-76.

36. Beverly T. Watkins, "Colleges Seek Ways to Help Adults Who Can't Read," The Chronicle of Higher Education, December 8, 1982, pp. 8, 10.

READING COMPETENCIES AND PRACTICES

Technical Reports

Kirsch, I., & Guthrie, J. Conceptual foundations for competencies and practices of reading. Technical Report #1, March, 1982, International Reading Association.

Kirsch, I., & Guthrie, J. Case studies of reading in a high technology corporation. Technical Report #2, August, 1982. International Reading Association.

Kirsch, I., & Guthrie, J. Prose comprehension and text search as a function of reading volume. Technical Report #3, August, 1982, International Reading Association.

Guthrie, J., & Seifert, M. Profiles of reading acitivity in a community. Technical Report #4. October, 1982, International Reading Association.

Guthrie, J.T., & Kirsch, I.S. What is literacy in the united states? Technical Report #5. February, 1983, International Reading Association.