

DOCUMENT RESUME

ED 276 020

CS 210 099

AUTHOR Langer, Judith A.
 TITLE Literate Communication and Literacy Instruction.
 PUB DATE [86]
 NOTE 24p.
 PUB TYPE Viewpoints (120)

EDRS PRICE MF01/PC01 Plus Postage.
 DESCRIPTORS Basic Skills; Cognitive Development; Cognitive Objectives; *Communication Skills; *Daily Living Skills; *Educational Change; Educational Improvement; *Educational Innovation; Educational Theories; Elementary Secondary Education; Interpersonal Competence; Language Skills; Learning Strategies; *Literacy Education; *Social Cognition; Social Development; Teacher Student Relationship; Teaching Methods

ABSTRACT

The kind of literacy education currently valued in America has been ineffective in teaching more thoughtful literacy skills. A sociocognitive approach to literacy instruction focuses on developing the thinking skills that students will use as they engage in socially purposeful activities. Teachers, tests, and instructional materials in this approach emphasize not isolated bits of knowledge, but students' growing ability to use language and communication skills in more varied and reasoned ways. This approach to literacy instruction also maintains that (1) skills, structure, and routines are internalized en route to accomplishing purposeful and socially meaningful activities, and (2) the kinds of literate thinking that learners acquire is reflective of the social context in which literacy is learned. If schools are to teach higher levels of literate thinking, teachers must value and use these activities as part of the ongoing social-communicative fabric of the classroom. When this occurs, the nature of instructional activities will shift from practice to application. In addition, literacy education will change its focus from reading and writing to ways of thinking appropriate to the demands of present society. (Included are examples of instruction from a sociocognitive perspective, such as logs, letter writing, uses of language, writing a newspaper, and a prereading plan.) (JD)

 * Reproductions supplied by EDRS are the best that can be made *
 * from the original document. *

ED 276 020

CS 210 099

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION
CENTER (ERIC)

- This document has been reproduced as received from the person or organization originating it.
- Minor changes have been made to improve reproduction quality.
- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Literate Communication and Literacy Instruction

Judith A. Langer
School of Education
Stanford University
Stanford CA 94305

"PERMISSION TO REPRODUCE THIS
MATERIAL HAS BEEN GRANTED BY

Judith A. Langer

TO THE EDUCATIONAL RESOURCES
INFORMATION CENTER (ERIC)."

Literate Thinking: An Expanded View of Literacy

People generally associate literacy with the ability to read and write. This is the common dictionary definition, the mark of literacy in society-at-large, and the one we generally think of in schooling. However, we can look at literacy in a broader and educationally more productive way, as the ability to think and reason like a literate person, within a particular society. In this view, literacy is culture specific. Thus, schools need to understand the ways of thinking that are involved in society's uses of literacy, and to use approaches to literacy instruction that will insure that these ways of thinking are being valued and learned.

The ways of using and thinking about literacy are determined by the uses to which literacy is put within a particular society. For example, if a culture needs and values memorization and recitation, as among the Vai in reading the Koran in Arabic (see Scribner and Cole, 1980), then the appropriate mode of instruction would be to train the students to memorize. However, if the uses of literacy require reflection and problem-solving, like the uses of English in the same Vai culture, then English instruction should help the students develop those kinds of abilities. When literacy is used primarily to complete language exercises and get the right answer, these skills become valued and learned. And when the literacy of the classroom and the literacy of the society differ, we need to ask serious questions about the goals of schooling.

While notions and uses of literacy vary among cultural groups, they also change within groups across time. In the United States, for example, early uses of literacy were relatively restricted (Resnick and Resnick, 1977; Kaestle, 1985), but the current era requires that students acquire the kinds of critical thinking skills that are needed to use the communication devices and technologies we meet on a daily basis in our everyday living and in entry level jobs (see Langer, in press). These new demands have been discussed, for example, by Noyelle (1985) who describes the shift in both the American workplace and in daily life from tasks involving manual to those requiring cognitive processes. Schools, Noyelle thinks, need to reflect these societal shifts by training students in the more flexible thinking skills they will need for entry into today's job market. If we are to respond to these concerns, literacy instruction needs to go much beyond the acts of reading and writing, and to teach culturally appropriate ways of literate thinking as well.

Attention to cultural ways of thinking associated with literacy allows literacy instruction to focus on how students think, as well as on the skills they use to read and write. It permits teachers and students to regard reading and writing as tools that enable, but do not insure, literate thinking. The kinds of literate thinking skills valued in our culture are generalizable to many situations besides those where people read and write-- situations where people talk about texts, are conscious of the distinctions between the author's meaning and their own interpretations, and are called upon to rethink and

reformulate what they know. This view of literacy isn't wholly reliant on the use of print. It values both the reader and the writing -- including the kinds of metacognitive and metalinguistic abilities that are found in the most successful learners.

For example, when a group of students read a social studies textbook and then discuss the contents and the implications, most people would say that the students are engaging in literate thinking. But what if they had had that discussion after seeing a television news report about the same topic? I would still want to claim that the students had engaged in literate thinking even though they had neither read nor written. Now, imagine a group of students who don't know how to read or write (in English or another language) engaged in the very same conversation about the television news report; I would claim that they too would have engaged in literate thinking. In contrast, imagine that the students had read the same social studies text and then completed end of chapter questions by locating information in the text and copying the information the questions asked them to utilize. I would claim that the kinds of literacy reflected in this activity do not reflect the kinds of literacy needed and valued by American society today-- that the activity does not reflect literate behavior, even if the students get the answers right. These examples highlight the distinction I am making between literacy as the act of reading and writing and literacy as ways of thinking.

Reading and writing as memorization or copying can be

socially appropriate (as with Arabic for the Vai). However, this form of literacy is inappropriate to the present day communication and technological demands of American society. It is the culturally appropriate way of thinking, not the act of reading or writing, that is most important in the development of literacy. Literate thinking manifests itself in different ways in oral and written language in different societies, and educators need to understand these ways of thinking if they are to build bridges and facilitate transitions among ways of thinking.

The State of Literacy in American Schools

How well are our schools currently doing in teaching the more thoughtful literacy skills used in today's society? The best available evidence comes from the National Assessment of Educational Progress. The most recent reports, based on the 1984 assessment, give us an overview of achievement in reading since 1971 (Applebee, Langer, & Mullis, 1985), and achievement in writing since 1974 (Applebee, Langer, & Mullis, 1986) -- in other words, over a decade of achievement in both subjects, in the elementary, middle school, and secondary grades.

The good news is that in both reading and writing, achievement among language minority school-age students has increased across the past 10 to 15 years. In reading, the rate of increase for minority students was higher than that of the white students of the same age. White students were still performing better, but the gap was substantially narrowed. That's the good news. The bad news is that in reading and writing none of the groups of students -- neither the minority

nor the majority students -- are doing all that well.

Improvement in overall achievement levels has come about because more and more students are able to perform well at the lower levels of competence in reading and writing --and that is where the minority students' growth has taken place as well. When the texts become more complex or the questions become more difficult-- when more thoughtful literate thinking is required--, comprehension drops off.

In writing, the students (again all students, minority and majority) seem to be developing at least minimal writing skills. They can write simple stories and reports, but cannot write persuasive or analytic pieces that require them to mount a coherent argument or explain their position or point of view. These results were similar for all groups of students: relative success at the more "basic" tasks and relative failure with anything that required more thoughtful responses. The students do not seem to be learning the type of literate thinking skills needed in present day society.

While these results are distressing, they reflect the success of our schools in teaching what they have set out to teach. Whether by accident or design, the school curricula and the tests that go with them have rewarded relatively simple performance, and they have undervalued the attainment of more thoughtful skills.

In a recent study, Arthur Applebee and I (Langer & Applebee, 1986) have found that even teachers who are deeply committed to using writing for broader purposes, who have sought to learn new instructional approaches, and who are committed to using writing

as a way to help their students think and learn, have great difficulty in carrying out their goals. We found that their attempts to focus on more thoughtful writing activities were undercut by their deeply rooted views of their role as "transmitter" of knowledge -- and with it their overarching concern with diagnosing what students needed to learn, teaching the missing information, and testing to evaluate the success of that teaching. This pattern of test- teach- test left even the best intentioned teachers with little room to encourage students to think, and muse, and grow as writers and readers.

Standardized tests reinforce these emphases. Studies of testing (Langer 1985, in press) show that not only do tests focus on small bits of information, but they make such unusual cognitive demands that it is difficult to know if a student got the right answer for the wrong reason or the wrong answer for the right reason. Thoughtful literate behaviors are not helpful to get through most tests we use in school.

An Example

I interpret these results as a signal that schools are basing their instructional programs on an older and more restricted definition of literacy, focusing more on the acts of reading and writing than on the ways of thinking.

For example, Maria, a woman who arrived in California from El Salvador about six years ago, enrolled in a 2 year degree program in a local college. In addition to her regular courses, she was placed in a basic ESL class as a result of her test scores. She got As and Bs in her economics, government, history,

and accounting courses, and also passed her first ESL course. But she took her second ESL course 3 times and couldn't pass the required posttest.

Although she was never assigned anything more than a few paragraphs in length to read in her ESL class, she borrowed many novels from me. She read Ernest Hemingway, Toni Morrison, and Alice Walker, and discussed them intelligently. She could also understand her academic coursebooks and could discuss the topics with me.

But when it came to the exercises she had to do in class and the post tests she had to pass, she got caught in a particular type of question answering skill: she couldn't figure out the difference between what her test labelled as direct statements, valid interpretations, and unjustified assumptions. She could explain very well whether a statement was true or not, and even how she knew it, but the terminology of the questions and its relation to what she had read continued to confuse her. She understood the passages, but had difficulty completing the exercises. Whenever she thought she understood how to complete the worksheets she would find an exception to her rule. She was a diligent student who arranged for tutorial help and bought extra workbooks to practice, but she simply couldn't "get" the answering skills needed to pass the tests. She finally left school without finishing her degree. She never had a chance to show how well she could read and reason and think critically in English.

Although it's a sad story, Maria is among the luckier ones.

She does have the literate thinking skills necessary to get her through in most situations. But in general, in both first and second language programs, students are getting exercises -- they aren't learning to think broadly enough or deeply enough about ideas and content. We need to look carefully at our instructional programs to see what we can do to change this.

Neither our old views of instruction nor most of our present approaches to instruction encourage thoughtful literacy learning. The activities assigned in most classrooms are like those Maria was required to complete -- they are "exercises" that require students to use small bits of language and small bits of thought, abstracted from the literacy activities to which they once belonged. They do not probe the students' understandings nor answer the questions the students might have about what they read. The activities are separated from the literacy event itself -- the text (or textbook) presents the exercise, it is done for the teacher, and its success will be judged by the teacher. This is in keeping with a traditional view of education which focuses on the teacher as transmitter of knowledge and the student as receiver of knowledge. It produces transmission instead of interpretation (see Barnes, 1976), where teachers transmit what they know for the students to receive. In such an instructional system the students' own backgrounds, experiences, and ideas are irrelevant. This is also the kind of education that is curriculum-goal driven: there is a set of skills or information to be learned, and the teacher tests to see what the students know and don't know, teaches what isn't known, then tests to see if it has been learned.

When instruction is driven by this model, the focus shifts toward discrete skills and small bits of information that are easy to test, and away from deeper understandings that although more complicated and time-consuming to consider are more supportive of literate thinking. And clearly, the results from the National Assessment suggest that such approaches have not been effective in teaching more thoughtful literacy skills.

The Sociocognitive View

Let me describe an alternative, what I call the sociocognitive view (see Langer, in press, for elaboration of a sociocognitive view of literacy learning as well as instruction). It grows out of theory on child language and literacy learning, and also out of more recent work in psychology, anthropology, and sociolinguistics (see, for example, Bruner, 1978; Heath, 1983; Luria, 1978; John-Steiner, 1980; Scribner & Cole, 1980; Vygotsky, 1979; Wertsch, 1985). It is rooted in the belief that learners do not learn rule governed systems such as language by having the rules presented to them by others and then practicing the rules. On the contrary, they learn such rules in the process of interacting with others to complete tasks in meaningful and functional situations. Routines develop as learners internalize the principles of approaches that work -- and they revise and refine their skills with repeated practice in functional settings (see Applebee, 1984; Langer, 1984; Langer & Applebee 1986; Langer, in press, for further discussion of the processes.)

What kinds of situations are likely to encourage students to think more deeply about what they are doing? The learning will take place in social contexts in which there are shared problems to solve or issues to discuss. In general, these will be situations where there is more than one right answer and where the answer that is given will need to be shared with and justified to other people who may disagree or who may misunderstand.

To be powerful educational contexts, these situations must also provide ways for students to learn the skills necessary to complete their tasks more successfully. There are many ways this learning can take place. Some of it can come about simply as a result of the interaction -- students will see what works and what doesn't, and will shape their performance accordingly. Some of it will come from models that others provide either through discussion or in the materials they are working with. Some of it will come from the differing strengths that other students bring; they will learn from each other. And some, of course, will come directly from the teacher. This may take the form of direct instruction, help offered at appropriate points in the activity, questions that the teacher asks, and the structures included to guide the students through the overall activity.

Thus in this view a prewriting activity is not just a way to get a lesson going, but is also a strategy for thinking about new material-- a strategy that a student should eventually be able to use alone. Such a view of instruction is at the heart of the sociocognitive approach.

A sociocognitive view means two things for instruction:

First that more attention is paid to the social purposes to which the literacy skills are being put-- students learn best when they are trying to accomplish something that is personally and socially meaningful. Second, it means paying more attention to the structure as well as content of tasks that we ask students to undertake so that direct instruction in needed skills will be provided as part of the task, at points where it is needed. In this way students will have a better chance of understanding how the new skills and knowledge relate to the activities that are being completed. Rather than simply memorizing isolated rules and facts (as in Maria's case), they will be able to make sense of how the rules work in completing literacy tasks.

To clarify what these notions look like in practice, the following section provides several examples of instruction from a sociocognitive perspective.

Learning Logs. A biology teacher with whom we were working (Langer & Applebee, 1986) began to use the last five minutes of each class period as learning log time. The students were asked to jot down any thoughts they had about their class: 1) what they had learned; 2) what they didn't understand at all; 3) what they were unsure of; and 4) something else they would like to know about what they had just studied. The teacher would read the logs and write notes back to the students, would sometimes organize the comments to put on an overhead projector as the basis of class discussion, and would use the logs in conferences with the students to discuss how their knowledge about biology was changing across the semester.

What is sociocognitive about this activity? First, it grows directly out of the social purpose of the learning activity and the writing of the logs. The students make the entries in order to communicate with the teacher about the lesson, and the teacher communicates back -- in writing, in class discussion, or in individual conferences. The logs are not used as tests where the students need to display a right answer. Rather, the activity provides room for the kinds of uncertainty that accompany new learnings. Because students can exhibit their uncertainties along the way, the teacher has a better chance of knowing the particular kind of help to offer.

Often this kind of learning log activity leads the student to put ideas together in new ways, simply by thinking and writing about them. If not, it opens communication with the teacher, making future assistance possible.

Letter Writing. Shirley Heath, a Stanford anthropologist, and Amanda Branscome, a 9th grade Basic English teacher (Heath & Branscome, 1985), had Branscome's students gather data about language use in their community. Through this activity they came to focus on issues of language use and language structure. They shared their new knowledge about language as well as their own personal experiences with pen pals to whom they wrote. Their varied audiences required them to engage in writing that became gradually more and more decontextualized. First the students wrote to older students in their school who knew something about them and their experiences. Through letter writing, they were able to learn when they had made themselves clear and when they

had not been understood by their audience. From direct feedback they were able to learn more about ways to write better. Then they wrote to Shirley Heath's daughter, close in age but geographically distant. They needed to explain more about themselves, the people, the places, and the activities they were writing about. Last they wrote to Shirley Heath, who wrote about her own travels and encouraged them to learn from her experiences and to share their own.

From a sociocognitive perspective, this activity was personally and socially meaningful, and the students' focused on presenting their ideas in ways that could be understood by the different audiences. It helped the students to do more academic writing than they had ever done before, instead of the usual writing exercise addressed to pretend audiences. The purpose and audience were real. Instead of the teacher marking their pretend letters and telling them they were unclear in their message, the real audience gave feedback about what they did and didn't understand in the students' letters. The students had to become more explicit in their writing in order to be understood; they had to pay attention to such things as discourse structure, syntax, and mechanics. And because the letter writing was staged to penpals who were different from them -- about whom they knew less-- they had to learn to provide increasingly more detail and elaboration and to become more explicit (more logical and more academic) in their use of language.

Uses of Language. Stephen Diaz, Luis Moll and Hugh Mehan (in progress) taught expository writing to junior high school

students. They turned the students into ethnographers who were to learn about the language uses in their own communities. As a group, they developed an interview questionnaire. They interviewed members of their community about such topics as their attitudes toward bilingualism and their uses of language. After completing the interviews, the students examined their data together and then wrote a report about their study and their findings. During this experience the students used literacy skills on many levels, to plan to gather information, to synthesize it, to analyze it for academic and social meaning, to elaborate upon their findings, and to present it in a coherent academic report. And they did it well.

From a sociocognitive perspective, the students had to communicate with each other about what to do and how to do it. They helped each other and their teachers helped them. Those who understood the nature of this highly academic activity could help the others think the problem through. The students also needed to think analytically about the kind of information they wanted and how best to get it. Throughout the activity, including analysis of the data and writing the report, they worked cooperatively, each assisting the others with the aspect of the task he or she understood and could do best. The teachers also helped them, and in the end the students had learned a great deal about research, about writing, and about literate thinking.

Writing a Newspaper. Françoise Herrmann (1986), a doctoral student of mine at Stanford, is studying foreign language

...ing in a sociocognitive context. She is having college students who are learning French as a foreign language engage in a collaborative learning activity in which they write a newspaper using a computer network. The students determine what the paper will be like, what topics to write about, how and where to gather the data -- everything from planning to production of the paper. They plan and talk among themselves, and they interview their informants. They become food critics, museum buffs, travel editors, and political columnists. And they see their columns grow on the computer, where they communicate with each other, edit each other's work, and collaborate with their teacher via the computer network. (They also, of course, generate oral language around the computer -- about use of the computer and about the newspaper itself.) Oral and written language, and talk about language as well as text, occur in both the computer and non-computer settings; the newspaper is the catalyst for language use.

Why is this a sociocognitive activity? First, it is a socially based activity. It is a joint activity where the need for language and the uses of language grow out of the groups' need to communicate with each other and to write their messages. It also involves interactive teaching. The students help each other both with the content and the language, and the teacher is available to help whenever needed. The language and literacy learning go on continuously, as the students make their commitments to work on the paper, develop their plans, write their articles, review each other's work, and publish the newspaper. The French language skills the students learn are

embedded in a context where they have opportunity to think about and plan and practice their new learnings over time, and to generalize their language learning to new situations. Because language is used in communication with others, vocabulary, syntax, verb forms, and text organization are discussed and learned in a way that is very different from the usual approach, even in activity-based foreign language texts.

A Pre-Reading Plan. Not all activities need to be done in a group. But when students will read or write alone, it is helpful to begin with a preliminary activity to help them think about what they already know about the topic. This lets them bring ideas to mind and language to express those ideas, and to develop connections (both topical and syntactic) as ways to link those ideas.

Some years ago, I developed the PREP activity, Pre-Reading Plan (Langer 1981; 1984), designed to do just this. In it the teacher asks the class to free associate about major concepts they will read in their texts, to tell everything that comes to mind when they hear the word "justice" or "conflict," for instance. The students have a chance to hear the ideas other students thought of as well as their own (such as "justice is not going to jail" or "conflict is a fight") and to discuss what made them think of what they did (such as "I saw it on television" or "it was in my social studies book"). From there, the teacher orchestrates a class discussion to help them think more deeply about all they already know about the concept. Finally, the students are reminded to think about the story or textbook they

will read, and to guess how the ideas they've just discussed will relate to the reading.

This is a sociocognitive activity because the class discussion provides a sharing of ideas, to remind students of what they know. It is social in that the students interact in their sharing of knowledge, and the teacher helps structure the discussion and the thinking, leading the students toward the particular language and concepts they will read about (or need to have available for writing) and also the ways in which the ideas might be connected. Students actively think about what they know, changing and refining their own ideas and their own language as new information is discussed by themselves and others. The activity also provides them with a useful strategy to use on their own-- a pulling together of relevant ideas to help make sense of new experience.

Discussion

In none of these activities is knowledge "transmitted." The role of the group members, the role of the teacher, and the goals of instruction are very different from the traditional view. There is cooperation and collaboration; there is a sense of a meaningful use to which language is put; there is talk and metatalk about language and about information. Further, the success of the learning is easily evaluated by both the learner and the teacher-- in terms of how well the job gets done. Both the student and the teacher know what the student does not understand, and where more help is still needed.

All this is a far cry from the pretest, assign, and retest

view of instruction that is prevalent in American schools. But it is difficult to adopt a sociocognitive approach to instruction. The more traditional paradigm, with its pre and post tests, marks a teacher's "success" -- it tells what and how much the students have "learned." Also, it elicits the kinds of responses the students will need to give when they take standardized tests. However, the simplicity of these instructional activities prevents them from leading toward more reasoned thinking -- because they don't involve the students as active and thoughtful learners in personally or socially meaningful tasks.

Literacy instruction needs to help students think more deeply and more broadly about language and content and to use these as they engage in socially purposeful activities like the examples above. Teachers, tests, and instructional materials need to begin to look for successful learning not in isolated bits of knowledge, but in students' growing ability to use language and literacy in more varied and more reasoned ways. And we also need to judge progress in learning by gauging students' ability to more successfully complete those activities. When this occurs, the nature of instructional activities will change dramatically -- from pretend to real tasks, from parts to wholes, and from practice to doing. And instruction will have begun to move from the focus on reading and writing exercises toward the teaching of literacy as a way of thinking appropriate to the demands of our present society.

Reference Note

1. This paper was presented as a plenary speech at the California Association of Teachers of English to Speakers of Other Languages, Oakland CA, April 20, 1986. Some of the ideas expressed are also argued in A Sociocognitive Perspective on Literacy in J. Langer (Ed.), Language, Literacy, and Culture: Issues of Society and Schooling, Norwood, NJ: Ablex, in press.

References

- Applebee, A.N. (1984). Writing and reasoning. Review of Educational Research, 54, 577-586.
- Applebee, A.N., Langer, J.A., & Mullis I.V.S. (1985). The reading report card. Princeton, NJ: Educational Testing Service.
- Applebee, A.N., Langer, J.A., & Mullis I.V.S. (1986). Writing trends across the decade, 1974-1984. Princeton, NJ: Educational Testing Service.
- Barnes, D. (1976). From communication to curriculum. Harmondsworth, UK: Penguin.
- Bruner, J.S. (1978). The role of dialogue in language acquisition, in A. Sinclair, R.J. Jarvella, & W.J.M. Levelt (Eds.) The child's conception of language. NY: Springer-Verlag.
- Bruner, J.S., Olver, R.R., & Greenfield, P.M. (1966). Studies in cognitive growth: A collaboration at the center for cognitive studies. NY: John Wiley & Sons.
- Diaz, S., Moll, L., and Mehan, H. (in progress). Laboratory of Comparative Human Cognition, University of California at

San Diego.

Heath, S. B. (1983) Ways with words. NY: Cambridge.

Heath, S.B. and Branscombe, A. (1985). In S. Freedman (Ed.) The acquisition of written language, Norwood, NJ: Ablex.

Herrmann, F. (1986). Computers and communication: Learning to write in a foreign language, Dissertation proposal, Stanford University, Stanford CA.

John-Steiner, V, (1985). The road to competence in an alien land: A Vygotskian approach to bilingualism, in J. Wertsch (Ed.) Culture, communication, and cognition. New York: Cambridge University Press.

Kaestle, C. F. (1985). The history of literacy and the history of readers. In Review of Research in Education, Volume 12. Washington D.C.: American Educational Research Association.

Langer, J.A. (1981). From theory to practice: A pre-reading plan, Journal of Reading, 152-156.

Langer, J.A. (1984) Examining background knowledge and text comprehension. Reading research quarterly, 19, 468-481.

Langer, J.A. (1984). Literacy instruction in American schools, American Journal of Education. 93, 1, 107-131.

Langer, J.A. (1985) Levels of questioning: An alternative view, Reading Research Quarterly. 21, 5, 586-602.

Langer, J.A. (in press). The construction of meaning and the assessment of comprehension. in R. Freedle and R. Duran (Eds.) Cognitive and linguistic analyses of test performance. Norwood, NJ: Ablex.

Langer, J.A. (in press). A sociocognitive perspective on literacy, in J. Langer (Ed.) Language, literacy, and

culture: Issues of society and schooling. Norwood, NJ:

Ablex.

Langer, J.A. & Applebee, A.N. (1986) Writing and learning in the secondary school; Final report to the National Institute of Education, Grant No. NIE-G-82-0027.

Langer, J.A. & Applebee, A.N. (1986) Reading theory and instruction: Toward a theory of teaching and learning. in E. Rothkopf (Ed.) Review of Research in Education, Volume 14. Washington, D.C. American Educational Research Association.

Luria, A.R. (1929/1977-78). The development of writing in the child, Soviet Psychology, 16, 65-114.

Noyelle, T.J. (1985) The new technology and the new economy: Some implications for equal employment opportunity. Unpublished paper, The Conservation of Human Resources Project, Columbia University.

Resnick, D.P. & Resnick, L.R. (1977). The nature of literacy: An historical exploration. Harvard Educational Review, 47, 3, 370-385.

Scribner, S. and Cole, M. (1980). The psychology of literacy. Cambridge, MA: Harvard University Press.

Vygotsky, L.S. (1979). The genesis of higher mental functions. in J. Wertsch, (Ed.). The concept of Activity in Soviet Psychology. NY: Sharpe.

Wertsch, J. (Ed.) (1985). Culture, communication, and cognition. New York: Cambridge.