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A Sociocultural Approach to Literacy and its Significance for CALL
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In recent years, scholars from a number of traditions, including psychology, education, linguistics, and sociology have converged on a new sociocultural approach to literacy. This approach has potentially great importance for how we conceptualize language education and the role that computers can play within it. This paper will discuss the contributions of four theoretical traditions?sociocultural theory, discourse theory, literacy theory, and critical pedagogy?to a sociocultural approach to literacy. Next it will summarize the main common points that emerge from these traditions and define the new approach. Finally, it will discuss the significance of this approach for the use of computers in teaching foreign languages, second languages, and indigenous languages.

Sociocultural Theory

A sociocultural approach to literacy has emerged from more general sociocultural theory, which itself developed from the theories of the Soviet psychologist L.S. Vygotsky (1962; 1978). Three central aspects of sociocultural theory have contributed to a new interpretation of literacy: the concepts of (1) genetic analysis, (2) social learning, and (3) mediation (Wertsch 1991).

Genetic Analysis. Genetic, or developmental, analysis suggests that it is possible to understand many aspects of mental functioning only if one understands their origin and the transition they went through. These origins include microgenesis (the unfolding of particular events), ontogenesis (the development of the individual), sociocultural history, and even phylogenesis (the development of the species) (Vygotsky 1962; 1978).

From genetic analysis we understand the futility of seeing literacy as an isolated event. Rather a proper understanding of the emergence of literacy has to take into account broad social, cultural, and historic trends related to the significance and reading and writing for human cognition and communication.

Social Learning. A second major point of sociocultural theory is the notion of the social origin of mental functioning. According to Vygotsky (1978), "Every function in the child's cultural development appears twice: first, on the social level, and later, on the individual level; the first, between people (interpsychological), and then inside the child (intrapsychological)" (p. 57, emphasis in original). Vygotsky further believed that this development principally took place through a form of apprenticeship learning; interaction with teachers or peers allowed students to advance through their zone of proximal development (i.e., the distance between what they could achieve by themselves and what they could achieve when assisted by others).

This concept has been developed to a great extent by contemporary scholars such as Lave (1988; Lave and Wenger 1991) and Rogoff (1990), who have demonstrated that apprenticeship learning is not unique to children but is also an integral part of formal and informal adult learning throughout the world. In this view, learning, whether by children or adults, is not an isolated act of cognition, but rather a process of gaining entry to a discourse of practitioners via apprenticeship assistance from peers and teachers.

From this point, we gain the concept that learning to read and write is a social practice rather than an individual skill. As will be discussed further below, those who are considered literate in any community are those who have apprenticed into certain social practices.

Mediation. A third major concept of sociocultural theory is the notion of <u>mediation</u> , i.e., the notion that all human activity is mediated by tools or signs (Wertsch 1991). What is thus significant about various tools? such as computers, writing, or language itself?is not their abstract properties, but rather, how they fundamentally transform human action. For Vygotsky, the incorporation of mediational means does not simply facilitate action that could have occurred without them, but rather, by being included in the process of behavior, alter the entire flow and structure of mental functions (Vygotsky 1981).

The concept of mediation will help us interpret the significance of particular tools in the practice of literacy. For example, cognitive scientists have suggested that computer-mediated communication represents a mediational tool so powerful that it may have revolutionary effects on human cognition and communication, similar in scale to those of the printing press (Harnad 1991) .

Putting the concepts of social learning and mediation together brings us to a <u>text-mediational perspective</u> of social apprenticeship, which emphasizes how learners participate together to socially construct knowledge (Wertsch and Bivens 1992). In this perspective, the significance of texts is not that they provide information or opportunities for practice, but rather that they can be used as "thinking devices" (Lotman 1988) to promote epistemic engagement and interpretation (Wells and Chang-Wells 1992).

Discourse Theory

Discourse theory is indeed a broad discipline; I will highlight the perspectives of a few scholars who have important contributions related to the development of a sociocultural approach to literacy.

Bakthin (1981; 1986) critiqued the view that language is either an abstract system of linguistic forms or an individual form of activity, positing instead that "language is a continuous generative process implemented in the social-verbal interaction of speakers" (Volosinov 1973, p. 98). For Bakhtin, all utterances (spoken or written) are filled with dialogic overtones, based on "echoes and reverberations of other utterances to which it is related by the communality" of communication (Bakhtin 1986, p. 91). The unique speech experience of each individual is shaped through constant interaction, characterized by a "process of <u>assimilation</u>--more or less creative--of others' words (and not the words of a language)" (p. 89).

In this view, increased and more focused interaction leads to higher forms of learning. "Words, intonations, and inner-word gestures that have undergone the experience of outward expression" acquire "a high social polish and lustre by the effect of reactions and responses, resistance or support, on the part of a social audience" (Volosinov 1973, p. 93); this intense social interaction is also where "creative energies build up through whose agency partial or radical restructuring of ideological systems comes about" (p. 92).

Finally, for Bakhtin, this interactive is most beneficial when it is most heterogeneous, that is when it crosses cultural boundaries:

> In the realm of culture, outsideness is a most powerful factor in understanding. It is only in the eyes of <u>another</u> culture that foreign culture reveals itself fully and profoundly...A meaning only reveals its depths once it has encountered and come into contact with another, foreign meaning: they engage in a kind of dialogue, which surmounts the closedness and one-sidedness of these particular meaning, these cultures. We raise new questions for a foreign culture, ones that it did not raise itself; we seek answers to our own questions in it; and the foreign culture responds to us by revealing to us its new aspects and new semantic depths. (Bakhtin 1986, p. 7).

Later discourse theorists stressed the notion that it is not isolated words that learners are assimilating through dialogic communication, but rather <u>genres</u> and <u>discourses</u>. Genres have been defined as a staged, goal oriented social process, and include examples such as jokes, letters to the editor, job applications, and lab reports (Martin, Christie, and Rothery 1994).

> Genres are referred to as social processes because members of a culture interact with each other to achieve them: as goal oriented because they have evolved to get things done; and as staged because it usually takes more than one step for participants to achieve their goals. (Martin, Christie, and Rothery 1994, p. 233)

Discourses can be viewed even more broadly:

> A Discourse is a socially accepted association among ways of using language, other symbolic expressions, and 'artifacts', of thinking, feeling, believing, valuing, and acting that can be used to identify oneself as a member of a socially meaningful group of 'social network', or to signal (that one is playing) a socially meaning 'role (Gee 1990, p. 131).

Thus, in the perspective of discourse theorists, social learning becomes much more complex. Learners entering a community of practice must creatively assimilate not merely the vocabulary and syntax of a language, but complex patterns of language use in social process.

Literacy Theory

Literacy theorists analyze the social, cultural, and cognitive aspects of literacy in a society. Though it is a common-sense belief that literacy involves a set of "context-neutral, value-free skills" (de Castell and Luke 1986, p. 87) of coding and decoding texts, literacy theorists have demonstrated that literacy is instead a complex social practice (Gee 1990; Lankshear 1994; New London Group 1996; Willinsky 1994). For example, de Castell and Luke demonstrate that conceptions of literacy have actually gone through several major changes in U.S. history, from a classical view of literacy as cultivation of the "civilized" person through understanding of literacy, to a progressive view of literacy as self-expression leading to the growth and development of a child, to a technocratic view of literacy as a functional skill leading to effective performance.

Once literacy is understood as a complex social practice, literacy instruction is viewed as apprenticing students into the discourses and social practices of literate communities. To accomplish this, both a transmission approach of filling students with information and facts (as proposed, for example by Hirsch 1987), and a training approach of instructing them in isolated decoding skills, become equally untenable. A more sophisticated approach is required which allows students to gain admission to discourse communities through practice, analysis, apprenticeship, and reflection. Several approaches toward this question have been put forward, including that of collaborative-apprenticeship learning (Bayer 1990), semiotic apprenticeship (Wells and Chang-Wells 1992), collaborative critical inquiry (Cummins and Sayers 1995), and the development of literate thinking through ethnographic investigation (Heath 1992). All of these perspectives are based on a combination of collaborative student-student interaction; expressive talk and writing; epistemic engagement of texts; inquiry into significant questions; and the active role of the teacher as a facilitator, guide, and, when appropriate, expert.

There is one other element of literacy theory which deserves attention. Recently, a broad group of scholars from several disciplines has put out the view that the social practices of literacy in developed countries are going through a change, and that what is now required is a perspective of multiliteracies (New London Group 1996). This concept includes two points. First, the culturally and linguistically diverse and increasingly globalized societies means that students must develop sophisticated ability to negotiate a range of registers, dialects, and languages with an international audience. Secondly, due to the expansion of new technologies, literacy pedagogy must now account for the burgeoning variety of text forms associated with information and multimedia technologies.

Critical Pedagogy

The last theoretical framework taken into consideration is that of critical pedagogy (Freire 1970; 1985; Giroux 1988; Cummins 1989; McLaren 1994). Most approaches to critical pedagogy build off the perspective of Freire (1970) who sharply criticized the "banking concept" (p. 53) of education, in which an all-knowing teacher deposits knowledge into passive students. In the banking model, students are restricted to receiving, filing, and storing the information deposited by the teacher, and in the end it is "the people themselves who are filed away through the lack of creativity" (p. 53).

Freire contrasts this concept with a liberatory pedagogy based on dialogue and problem-solving in which, "teachers and students (leadership and people), co-intent on reality, are both Subjects, not only in the task of unveiling that reality, and therefore by coming to know it critically, but in the task of re-creating that knowledge." (p. 51)

The following are essential elements of critical pedagogy:

> • Liberating education consists in acts of cognition, not transferrals of information.

> • This cognition comes about through dialogue between co-investigators, with teachers and students jointly responsible for a process in which all grow

> • The content of education is based on the generative themes important in students' own lives

> • These themes are best dealt with through a problem-solving approach which seeks a link between themes, recognizes their historical-cultural context, and integrates both reflection and action.

Critical pedagogy thus intersects with several of the themes mentioned earlier, including an emphasis on meaningful investigation, a process of student-based interaction and problem solving, and a content related to students' own lives.

Summary and Integration: Sociocultural Approach to Literacy

While it is clear that the contributions and perspectives of each of these fields?sociocultural theory, discourse theory, literacy theory, and critical pedagogy?are unique, it is also clear that there is much overlap to be found. The following represents a sociocultural approach to literacy which integrates important concepts from the above-mentioned theories:

- Language and literacy education are best not viewed in a narrow sense, but rather as part of a process of helping allow students to participate fully in public, community, and economic life
- To participate fully in public and economic life in the present and future implies abilities of symbolic analysis, critical thinking, cross-cultural awareness, and meta-linguistic awareness; it also means being able to communicate in more than one language and/or dialect and being able to master a variety of media
- Classroom-based literacy thus must involve far more than passively encoding text, but rather the development of literate skills of thinking, interpretation, and analysis
- Literacy cannot be defined as an individual cognitive act, but rather as a social practice; to teach literacy therefore means to apprentice people into the social practices of literate communities
- This apprenticeship is best achieved through a focus on authentic meaning of importance to the lives of students
- It involves forming new types of relationships between students and teachers, with students working in critical collaborative inquiry with other and assisted by the teacher
- While a focus on form takes second place to meaning/critical problem solving, it is not dropped out entirely; rather, students from diverse cultural and linguistic groups rely and form-based/genre-based instruction to gain access to new discourses (Delpit 1988; Gee 1990).

Significance for CALL

The significance of the sociocultural approach to computer-assisted language learning will now be considered in three main situations: foreign language teaching, second language teaching, and the teaching of indigenous languages.

Foreign Language Teaching

Literacy in foreign language teaching has long been conceptualized as basic skills of coding and decoding. Who hasn't taken turns reading sentences aloud in a foreign language class?

A sociocultural approach to literacy does not deny the importance of coding and decoding text, but places that particular skill in context of social literate practices. An English-speaking American becomes literate in French, Spanish, or Japanese by successfully gaining entry into the discourse communities of users of that language. And that entry can only be realized through dialogic communication and interaction, not through the decontextualized acquisition of vocabulary or skills.

This then provides a powerful theoretical motivation for many of the shifts which have taken place in CALL in recent years. The earliest round of CALL software was based on the principle of underlined transmission , in which a learner passively received computer-assisted instruction. Later CALL software was based on principles of constructivism, in which learners were given more choices and autonomy to manipulate language in order to construct their own individual model. Both of these paradigms are now superseded by principles of dialogism, in which meaning is found neither in the text nor in the individual learner, but rather is developed in interaction between an individual and a social audience.

A dialogic perspective does not necessarily totally reject transmission-oriented CALL programs (such as those that drill vocabulary) or constructivist-oriented programs (such as those that allow text manipulation). Rather though, it sees that these are incomplete without giving learners the opportunity for interaction with speakers of a language and their texts. This type of interaction can take many forms, but is often facilitated by computer-mediated communication. For Richard Kern's university French students it meant engaging in an ongoing dialogue with lycée students in France about the immigrant experience in the two countries (Kern 1996). For Cindy Kendall's high school Spanish students, it meant surveying people in Latin American countries about a range of cultural and social issues (Kendall 1995). For Emanuela Tudoreanu's elementary school students of English in Romania, it meant comparing notes with children in Florida about visits to respective Space Centers in the two countries.

What's noteworthy about these three projects, and many other successful Internet-based projects (Cummins and Sayers 1995; Warschauer 1995), is that they involve far more than simple pen-pal exchanges. As indicated above, acquisition of literate skills involves not only conversation, but also analysis, reflection, cross-cultural interpretation, collaborative problem-solving and critical thinking. Successful use of the Internet in the foreign language classroom generally involve well-planned projects demanding critical, collaborative inquiry.

Second Language Teaching

Learners of English as a Second Language (ESL) are in a different situation than foreign language learners in that they have more opportunities for day-to-day contact with the culture and language. Even though, computer networking can still play an important role in helping achieve new types of literacy.

Students of ESL can be divided into two main groups with differing needs: international students and immigrants. Most international students come to the United States temporarily to study in a college or university. They have often had several years of English, but usually have not had a single writing or composition class in the language. Many lack confidence writing in their own language, since composition is either not taught, or not taught well, in many countries of the world.

At the University of Hawai'i, international students in the campus's English Language Institute integrate computers into their instruction in several ways. Their are taught how to use e-mail and instructed on how to join academic listserver groups so they can become more familiar with academic discourse in their fields. They are taught how to search for academic and professional information on the World Wide Web, and how to post their own curriculum vitae and articles on the web as a way of gaining more interaction with the international scholarly community. They carry out electronic discussion (asynchronously and synchronously) with classmates in their particular fields to hash out the particular problems that a linguistics or a chemistry major has in writing for a specific purpose.

Immigrant students in ESL programs come with their own set of problems. Like most language and ethnic minority students in North America, they often attend poorer schools with fewer computers and fewer well-trained teachers. Those immigrant students who do make it to college often gain a fluency in speaking, but still have numerous writing problems. For an immigrant ESL student entering college, enhancing literacy probably involves gaining a sense of voice and audience, learning how to back up generalizations with concrete evidence, learning to analyze the beliefs and assumptions of writer and reader, and learning to take into account the background knowledge of the reader. Timothy Janda of the University of Nebraska has developed a whole series of small-group e-mail activities, ranging from taking a stand on and debating a controversial issue (Janda 1995a) to analyzing statistical information in graphs and charts (Janda 1995b). All are designed to take advantage of the text-based, dialogical nature of e-mail to help develop literacy as a social practice.

The Teaching of Indigenous Languages

In various models of teaching languages to speakers of other languages, the teaching of indigenous languages is often left out. Living in Hawai'i though has given me a keen sense of the important of indigenous language revitalization in this part of the world, and perhaps many others as well.

Here in Hawai'i, the very act of learning Hawaiian is a profound sociocultural act, since it is part of an effort to reassert the rights of the Hawaiian people against a century of linguistic and political repression. Interestingly, computer networking is once again playing an important role, not only when viewed from the perspective of the individual language learner but also from the point of view of the revitalization of the language.

The number of native speakers of Hawaiian is estimated at less than 1,000, most of whom are elderly (Warner 1996). After a lengthy struggle by Hawaiian community activists, a Hawaiian immersion program was launched in the state's pre- and elementary schools some nine years ago, and the pioneer children in that program are just now entering Hawaiian. These children have completed all their education exclusively in the Hawaiian language, except for an hour a day in English.

There simply are not enough funds in Hawai'i to produce a range of textbooks covering all the disciplines needed in school in the Hawaiian language. Nor is there enough concentration of fluent adult speakers to provide sufficient models for children. Hawaiian educators have seized on the Internet as an important tool to help overcome these problems. One of the most inspiring efforts has been the development of Leokï (The Powerful Voice), a Hawaiian language bulletin board system that features e-mail, a newspaper, chat lines, a Hawaiian language dictionary, user feedback, and a voting booth, all in the Hawaiian language and with Hawaiian menus (Hale 1995). Children in the immersion program can thus read news articles, discuss and debate issues with children at other schools both synchronously and asynchronously, and cast their opinion on important issues affecting the Hawaiian community--all on-line. Hawaiian educators and parents speak with great pride about how their children are learning to navigate the high-tech world in the Hawaiian language.

Conclusion

A sociocultural approach to literacy suggests that reading and writing, whether in the first or second language, involves far more than the simple decoding and coding of text. Rather, literacy is a complex social practice learned through dialogic communication and apprenticeship into literate discourse communities. It involves skills of abstraction, reflection, analysis, interpretation, cross-cultural understanding, collaborative problem-solving, and critical thinking. Computers in and of themselves will not provide any of these, but carefully planned computer-networking projects can provide a valuable support for any teacher interested in enhancing the literacy of students in a foreign, second, or indigenous language.

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