That writing has unique powers for promoting learning has become a given among many composition teachers and researchers. Peircean semiotics suggest that writing is one of many forms of composing available for mediating thought and activity, and that the value of any form of mediation depends on the context in which it takes place. The present study used stimulated recall *to elicit a retrospective account from an alternative school student following his production of an artistic text representing his view of the relationship between the two central characters in a short story. The student's account indicates that in composing his text he (a) initiated his interpretation by empathizing with one of the characters, (b) produced a graphic representation and transformation of the relationship between the two central characters, (c) situated his text in an intertext, and (d) produced a text that both* shaped *and* was shaped by *his thinking. Furthermore, the "text" he produced through the stimulated recall interview likely involved a reconsideration as well as re-representation of the graphic text he had drawn, thus enmeshing the investigative method itself with the student's growing realization of the meaning of his work. His account suggests that nonlinguistic texts—when part of an environment that broadens the range of communication genres available to students—can help students construct meanings that are appropriate to school activities and learning.*

Cultural Tools and the Classroom Context

An Exploration of an Artistic Response to Literature

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Many teachers and theorists regard writing as having almost mystical powers of expression and self-realization, being "revered—and feared—as a kind of magic, as a process of invoking the muse, of hearing voices, of inherited talent" (Murray, 1980, p. 3). Writing, according to Emig (1977), is a unique mode of knowing with an innate capacity for promoting learning. Yet as Ackerman (1993) has argued:

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> By featuring the technology of writing, Emig's theory and others based on it seem to assume that one mode of communication is inherently blessed and able to produce our culturally valued qualities of abstract thinking, reflection, and critique. . . . Strong text theory isolates speaking, reading, and writing as distinct modalities and ignores social and cultural powers and the intersubjective practices that define literate acts. (p. 350)

Ackerman and other semiotic theorists have called into question the privileged status of writing among composition theorists and educators in general. As part of what he calls "a constructivist semiotic of writing," Witte (1992) argues that composition researchers need to develop "a broader, more culturally accurate notion of writing and text" (p. 238). Writing research, he asserts, is limited by perspectives that "presuppose verbal language as the only sign system relevant to the study of writing" (p. 249). Drawing on the semiotic theories of Peirce (Hartshorne & Weiss, 1931-1958), Witte sees linguistic signs (including writing) as one of many types of signs through which people make meaning. He maintains that "regardless of the symbols out of which they are made, [texts] are no more than Peircean signs [that] suggest only a 'meaning potential'" (p. 287). Texts take on meaning only through constructive acts on the part of the reader.

The concept of "meaning" is often referred to in discussions of semiotic interpretation, language arts instruction, and reading comprehension, yet is rarely defined (Smagorinsky, 1986). For the purposes of this investigation we refer to an act of meaning construction as one in which a reader engages in a transaction with the signs of a text in order to initiate a personal transformation through constructive social activity (see Rosenblatt, 1978). "Text" in this context refers to any medium that participates in a sign relationship (Lemke, 1988; Witte, 1992).

The idea of the infinite potential of sign systems for making meaning extends from the formal to the mundane. Lemke (1988) argues that

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"All modes of socially meaningful human action are semiotic: drawing pictures, gesturing, pitching a baseball, washing dishes" (p. 82). Key to such a semiotic perspective is the importance of *constructing meaning* through the production and interpretation of signs. An object itself is inherently meaningless. It only takes on meaning—becomes a sign—through constructive acts on the part of the creator or beholder. A modern Southern Baptist and a twelfth-century Arab, for instance, would surely impute quite different meanings to the stable object of the cross.

The meaning attributed to signs does not come in isolation but as part of a culturally-learned network of associations. And the signs that give order to particular contexts—churches, bingo halls, courts of law, supermarkets—take on their meaning through their relation to other signs in the environment. In given settings specific sign systems tend to become established as the privileged mediums of communication. Schools tend to favor linguistic and logical/mathematical means of expression (Gardner, 1983). Wertsch (1991), drawing on the work of Bakhtin and Vygotsky, has argued that educators should broaden their acceptance of the means through which students mediate thought and activity in school settings. Wertsch feels that when educators emphasize speech as the primary means of semiotic mediation, they do not consider "the *diversity* of mediational means available to human beings" (p. 93). He argues that educators should enable students to employ a *tool kit* of mediational means; in other words, educators should take into consideration the different forms of mediation to which people have access and respect the choices they make in selecting a specific means of mediation for a particular occasion. Classrooms, however, tend to limit the options available to students in terms of the tools they privilege and the ways in which students are allowed to use those tools (Marshall, Smagorinsky, & Smith, in press).

Peirce's semiotic theory, however, suggests that *a variety of cultural tools*—including writing, art, dance, and other mediums capable of producing "texts"—have potential for enabling students to construct meaning in classrooms, *depending on the extent to which they are valued in that context*. A particular tool in and of itself has no special potential for changing the nature of student meaning construction (Ackerman, 1993). Rather, the range of tools available in particular settings, such as classrooms, is one aspect of a total learning environment. Wertsch's (1991) "tool kit" is not therefore something that students can carry with them from classroom to classroom when the contents of the kit

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are not valued as cultural tools; rather, the tools are only useful when used in milieus in which they are valued as mediums of constructing meaning and engaging in social transactions.

The present study took place in an alternative school/treatment facility for recovering substance abusers where the therapeutic and instructional environment supported student-generated means of mediating thought and activity. We investigated the processes involved in the creation of an artistic text in response to a short story, using a videotape to stimulate an interview with a student about his composing processes. The students in the class had been given free range to produce any text of their choice to represent their understanding of the story.

Through the stimulated recall interview the student who is our focus in this research reflected on the processes engaged in as he read the story, chose his textual medium, ascribed meaning to the story, and produced his text. Our analysis focuses on how the student's production of an artistic text reflected his own historical dependence on art as a means of communication, the overall environment of the alternative school, the predispositions of his teacher, and the resultant open-ended quality of the student's classroom.

CONTEXT OF THE INVESTIGATION

The Student

"Dexter" was a 16-year-old male. At the age of 2 he had experienced a hearing impairment, which was not corrected until the age of 6. Because his speech had been underdeveloped due to his hearing impairment, from ages 2 to 6 Dexter had often communicated by drawing his requests. A family member related that to request a bowl of cereal he would draw a cereal box "with amazing detail." In elementary school he had been screened for enrollment in special education but had not met the criteria for admission and remained in mainstream classes.

During the 2 years prior to the data collection, Dexter had performed poorly in school. In his last semester at a mainstream junior high school he had received Fs in four of the six courses he had taken, with his only passing grades a D in physical education and an A in art. Upon entering the treatment facility he enrolled as an eighth grader because of insufficient grades in math and English; however,

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he soon met the criteria for promotion to ninth grade (his status at the time of the data collection). In the semester prior to the data collection he had failed all four courses he had taken at the treatment facility. On his most recent nationally normed tests (taken 2 years before the data collection) he had scored 2 years below grade level in reading, 1 year below normal in math, and 3 years above grade level in science.

Despite his academic difficulties in prior years, Dexter was performing well in the class he was enrolled in at the time of the data collection. In the class we investigated for this study, Dexter had signed a behavioral contract to complete assignments and consistently finished projects with greater consistency than he had shown the previous year. He concluded the year by entering a state-wide poetry competition and placing second for his grade level. His poem as originally written included many of the problems with spelling and punctuation typical of his writing as illustrated in Figures 1 and 2. Figure 1 is a poem he wrote on the back of a math assignment, a poem not assigned or solicited by his teacher. Figure 2 is a short-answer quiz on a series of stories the class had read. For his award-winning poem, Dexter received help in typing the final draft to eliminate such problems.

The Facility

The setting for the research was an important factor in the students' recognition of artistic texts as legitimate social and intellectual expressions. The research took place in a residential drug and alcohol rehabilitation facility that provided both therapy for recovery and public school educational classes. The students had committed themselves (sometimes reluctantly) to long-term therapeutic, community-based treatment for 6 to 18 months. Because of federal and state laws related to confidentiality, no information that links data, location, and specific identities of individuals may be described or suggested; we use a pseudonym for the student focused on in this report. A general description of the facility is possible, however. Following is an account of the context in which the event analyzed in this study took place.

Instructional Context

Teacher's characteristics. Dexter's teacher had taught for a total of 15 years in public secondary schools, interrupted by a 7-year hiatus to manage a family-owned piano and organ business that he continued to manage when he resumed teaching. He was a published poet

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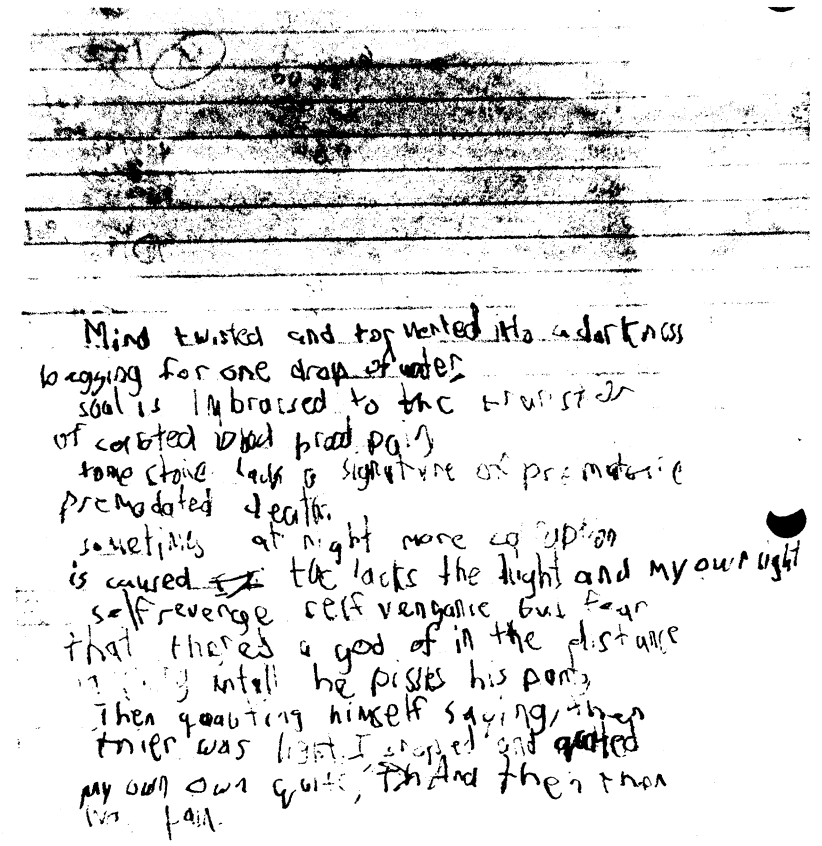


Figure 1: Dexter's Poem

and had been writing poetry for 30 years. Though not a formal performer of arts or music, he had had an extensive association with the aesthetics of artistic performance. His mother had been a painter and ceramic artist, his sister had trained as a concert pianist, and his brother had been a professional dancer and choreographer, exposing the teacher to the performance and critique of art throughout much of his life. His experiences in the music business had brought him into contact with many musicians, giving him familiarity with the outlook of artists.

In addition to his exposure to the arts through his family and business interests, the teacher's graduate education had brought him

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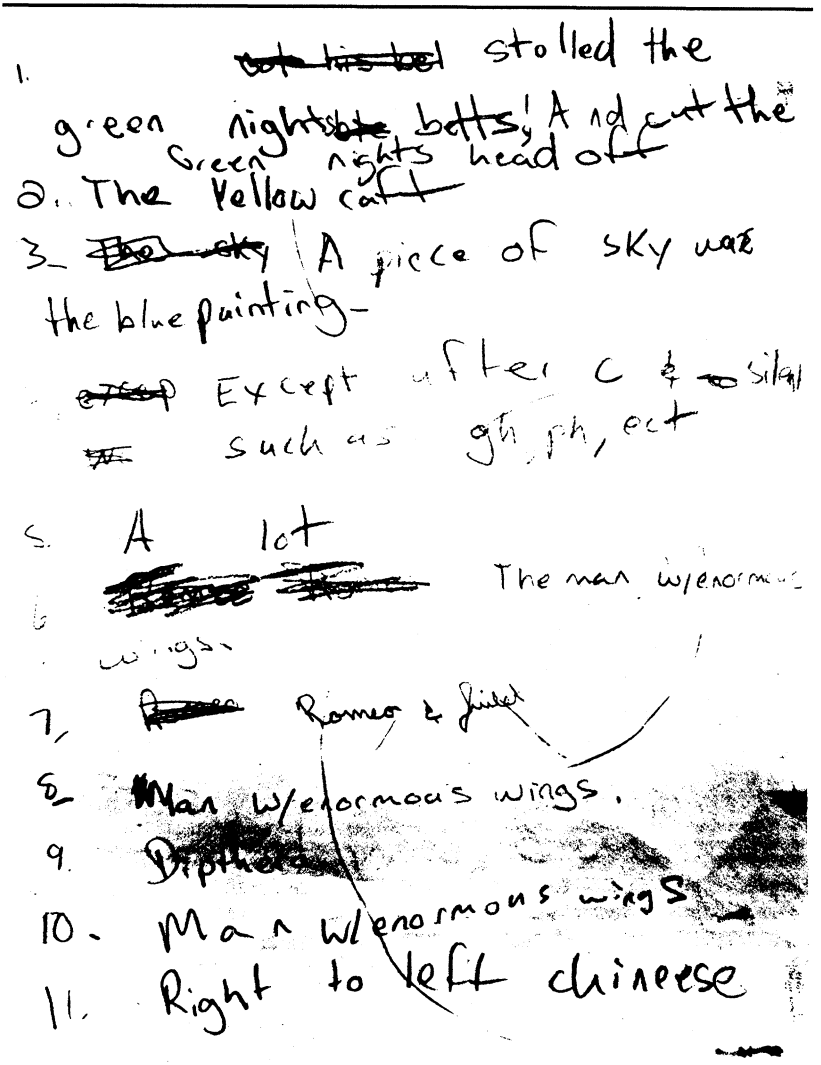


Figure 2: Dexter's Quiz

into contact with the work of Gardner (1983), whose theory of multiple intelligences has helped justify a greater role for the arts in conceptions of literacy (see Eisner, 1993; Harste, Woodward, & Burke, 1984; Smagorinsky, 1991).

Communication genres. The facility employed only two teachers, each of whom taught a variety of subjects, enabling their instruction

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to cross disciplines easily. The teacher studied here was obligated to cover certain amounts of material in each subject area, but had unusual flexibility in the ways in which he could do it. By the end of the second month of the year the students were familiar with an environment that validated a variety of ways of knowing and interacting. With subject-area boundaries softened and with a variety of means of expression appreciated, the teacher could employ unconventional *communication genres*, a term we use to describe a broadened version of what Bakhtin (1986) calls "speech genres."

Bakhtin (1986) says that "Certain features of language take on the specific flavor of a given genre: they knit together with specific points of view, specific approaches, forms of thinking, nuances and accents characteristic of the given genre" (p. 289). Speech genres describe an appropriate grammar and terminology and also "specify regular sequencing of types of action, of the functional constituents of an overall activity [such as] the question-answer-evaluation dialogue of classrooms" (Lemke, 1988, p. 82). Wertsch (1991) maintains that "socialization involves mastering the rules for using particular speech genres in particular sociocultural settings" (p. 130).

Although Bakhtin characterized speech genres as linguistic phenomena, Holquist (Bakhtin, 1981) argues that "Bakhtin seems to endorse that broad definition of language offered by Jurij Lotman in *The Structure of the Artistic Text*, 'any communication system employing signs that are ordered in a particular manner' (p. 8)" (p. 430). Thus the term *communication genre* would more appropriately describe the conventions governing expression when students use a full "tool kit" of mediational means (Wertsch, 1991). In Dexter's class, students had access to a variety of communication genres as they constructed meaning in and across the various disciplines.

Teacher's goals. In the first 2 months of school the teacher had set three goals for the students. The first goal concerned the building of self-esteem, with an emphasis on the acceptance—and ideally, validation—of their knowledge and past experiences to inform their schoolwork. The teacher's second goal concerned empowering students to experiment with and express their feelings, values, ideas, and perspectives through a medium that they felt confident using and that was effective in communicating richly and clearly. The third goal was for students to become more independent learners. Toward this end he structured his teaching so that he provided strong additional support for student learning and gradually placed students in situations that called for them to draw on resources other than the teacher,

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including peer support, reference sources, and their own internalized understanding of the concepts under study. As such he intentionally "scaffolded" (Bruner, 1975) student learning.

Prior instruction. Prior to the data collection students had a series of experiences similar to the one studied during the stimulated recall interviews. In each case they had been asked to create a product of their choice to represent their understanding of or response to a given text. Students were given the option of working alone or with peers. The students responded to two stories prior to the data collection: *Sir Gawain and the Green Knight*, which the teacher had read orally to the class, and *The Guest* by Albert Camus, which the students had read individually.

The teacher did not give explicit instruction in artistic response. Rather, he allowed students choice in the textual medium they would use. In response to the first story, most students had produced a written response. Some students, however, had produced songs in response to the story and were allowed to perform them before the class, accompanied by "air guitars." Perhaps encouraged by the class's response to the artistic rendering of the story, more students produced nonwritten texts following their reading of the second story, such as a Tinkertoy building-block scales of justice depicting the mind of the protagonist, drawings, and other artistic texts.

Between the reading of the stories the class had analyzed a slide projection of two paintings, one being Vermeer's *Lady Reading a Letter* and the other being Yves Klein's *IKB 74*, a modern painting consisting entirely of a single shade of blue. Following the discussions of the paintings, the students had been given the option of composing an essay, writing a poem, drawing a response, or otherwise representing their understanding of the painting under study. The teacher's goal with this sequence of instruction was for the students to be able to read, visualize, and respond to stories independent of teacher direction, though quite possibly through collaboration with other students.

METHOD

Data Collection

General procedure. The research employed "stimulated recall," a method originally developed by Bloom (1954) to study students'

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thought processes during classroom discussions and lectures. Bloom filmed students during discussions and lectures and immediately used the film as a stimulus for a retrospective account describing thought processes during the class period. He developed the method to identify thought process and levels of attention without interrupting the classes or processes themselves.

Most stimulated recall studies have attempted to identify a precise running record of "mental processes occurring during the event" (Rose, 1984, p. 23). The research reported here did not intend to track the linear unfolding of cognitive processes, but rather aimed to explore the range of processes recalled by the student. The research used the stimulus of the videotape to elicit an open-ended interview from the student instead of employing verification measures to identify a sequence of processes in the manner of Bloom (1954) and Rose (1984). (See DiPardo, 1994, for a discussion of stimulated recall interviews that do not aim for precise process tracking.)

We consider ourselves part of the data, rather than neutral participants in the conduct of these interviews. "Neutral" behavior in interviews is at best an illusion (Rosenthal, 1966; see Smagorinsky, 1994). We helped to scaffold Dexter's recollection of process and thus were participants in the account. Instead of viewing this participation as a "contaminant" of the data, many view the researcher's role in such interviews as instructive and as a contribution to the participant's learning during the course of the investigation (Swanson-Owens & Newell, 1994). Undoubtedly the interview resulted in an account that is different from one that would have been obtained without our participation. Our questions and prompts sustained more elaborated traces of the processes than Dexter otherwise would have reported. Our goal was to encourage the participant's elaboration through prompts and open-ended questions without cuing specific types of response.

Researchers using stimulated recall must take into account the *dialogic* nature of meaning-construction. Dialogism is Bakhtin's (1981) term describing the way in which thought is inherently social: "Everything means, is understood, as part of a greater whole—there is a constant interaction between meanings, all of which have the potential of conditioning others" (p. 428). To Bakhtin, all thought is rooted in prior thought; monologic thought is impossible. Bakhtin's conception of dialogicality refers more to the historic development of thought than to an interview between researcher and subject, yet the

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principles apply to some degree in all social transactions. The multivoiced quality of the interview, therefore, represents a type of dialogic transaction that prompts the participant's reflection in areas that are within his grasp yet might not otherwise be reached.

The methodology complicates the data analysis in an additional—and crucial—way. As we analyzed the data for this study we came to two realizations. First is that the interview introduced a new voice in Dexter's consideration of the drawing that had not affected his thinking during his production of the drawing. During his reading and artistic response to the story, he had one exchange with another person, that being when his teacher had asked whether one of the characters he had drawn had a specific referent in the story. Dexter affirmed the teacher's interpretation even though in the interview he revealed that the character he had drawn had multiple referents for him. The voices introduced through both the teacher's brief intervention and the researcher's questions likely mediated Dexter's perspective on the text he created. The interview, therefore, could have caused him to interpret his text in ways not possible in his prior unaffected considerations of the drawing.

The second point is that *the interview's participation could well have helped to produce a new text for Dexter*. In other words, his original production of the drawing may have had a particular meaning to him that the dialogue of the interview mediated into a new understanding. We are less confident, then, that the interview produced an accurate record of prior thought processes than that it generated further development of his interpretation of his own text and the story that had inspired it.

Procedures for This Study

Videotaping procedures. The data were collected on two consecutive days at the end of the second month of the school year. On the first day the classroom was set up in its normal arrangement, which seated students at a loose collection of small tables each accommodating 4-5 chairs, plus additional chairs and a couch. In two adjacent corners of the room, video cameras were angled at 45 degrees so that every point in the room was filmed by either or both cameras.

Students were given individual photocopies of a short story, William Carlos Williams' *The Use of Force*. The story concerns a doctor who narrates an account of a house call he makes during a diphtheria

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epidemic. The doctor must extract a throat culture from a young girl who has displayed symptoms of the illness. The girl battles him savagely and hysterically to prevent him from examining her throat, and her parents try to help the doctor by holding her down and shaming her into complying. During the course of the struggle the doctor develops contempt for the parents and passion toward the girl. Against his rational judgment, the doctor becomes lost in "a blind fury" to attack and subdue the girl. In "a final unreasoning assault" he overpowers her and discovers her "secret" of "tonsils covered with membrane." The story ends with a final act of fury in which the girl attacks the doctor "while tears of defeat blinded her eyes."

The teacher wrote instructions on the chalkboard for the students to read the story and then, either alone or in a group of their choice of any size up to five, fashion some product or text in response to the story. The room had been stocked with a variety of mediums through which the students could express themselves: Conventional paper and pens for writing, Tinkertoy building blocks, paints and other art supplies, a versatile keyboard synthesizer, a simpler keyboard instrument, and a computer with a graphics program. In addition, some students went to their rooms and got guitars, cassette music tapes, masks, and other resources to supplement what had been provided for them.

The students had a total of 1 hour in which to read the story, decide how and with whom they would respond to the story, and produce their texts. The video cameras filmed the entire hour, including the reading of the story.

Selection of student. Due to a number of limitations, the researchers selected a sample of students to study, rather than all the students in the class. The limitations were imposed by both time and resources. As part of their rehabilitation, the students' lives were heavily scheduled at the facility. They had to go to class, attend therapy sessions, prepare and fix meals, and participate in work duty to maintain the facility. The research was designed to be as unobtrusive and respectful of the students and their rehabilitation as possible and was conducted so as not to upset the priorities of the program. Therefore, at certain times of day interviews could not be scheduled. The facility's schedule also accounted for the limit of 1 hour in which to film the students' text productions.

The interviews took roughly 1 hour and resources were limited to one VCR on which to play the tapes and one researcher to conduct the interviews. Therefore, only one interview could be conducted at

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a time and these only at certain times. The limitations of time and resources enabled the collection of a total of four interviews. Coming back on a third day (which would have been a Monday) would have allowed too much lapsed time for recall, even with the stimulus of the videotape (Bloom, 1954; Greene & Higgins, 1994).

The students were selected according to their availability, the type of text they composed, the size of group they participated in, and how they represented the racial and sexual makeup of the student body. This report focuses on one student who drew a picture in response to the short story.

Stimulated recall interview. Following the videotaping the students were required to engage in 1 hour of maintenance duties, including the preparation, eating, and cleaning up of lunch. Dexter then sat with the researcher in front of a large television screen to view the videotape of his reading and artistic response. In that the video camera had captured students other than the one being interviewed, Dexter was "framed" on the television screen by taping paper around the border of his image to help focus on his activities. As the videotape played, a portable audiocassette tape recorder recorded the interview between researcher and student. The researcher's questions were not preplanned, but were stimulated by the activity on the videotape. The researcher's role, therefore, was to use the videotape to pose open-ended questions requesting retrospection about the thought processes behind particular behaviors. Examples of the questions and prompts of the interviewer appear throughout the transcripts reported in the results section of this report.

RESULTS

This article features the stimulated recall interview with one student in the class, Dexter, who drew a picture (see Figure 3; original size: 17" x 11") to depict the relationship between the doctor and the girl in *The Use of Force*. In his account Dexter revealed a number of processes involved in his artistic composition: (a) He drew on personal experiences to empathize with one of the characters; (b) he engaged in a graphic representation and transformation of the relationship between the two central characters; and (c) he situated his text in an intertext—including a text he appropriated and the text he was in the process of developing—to establish the picture's perspec-

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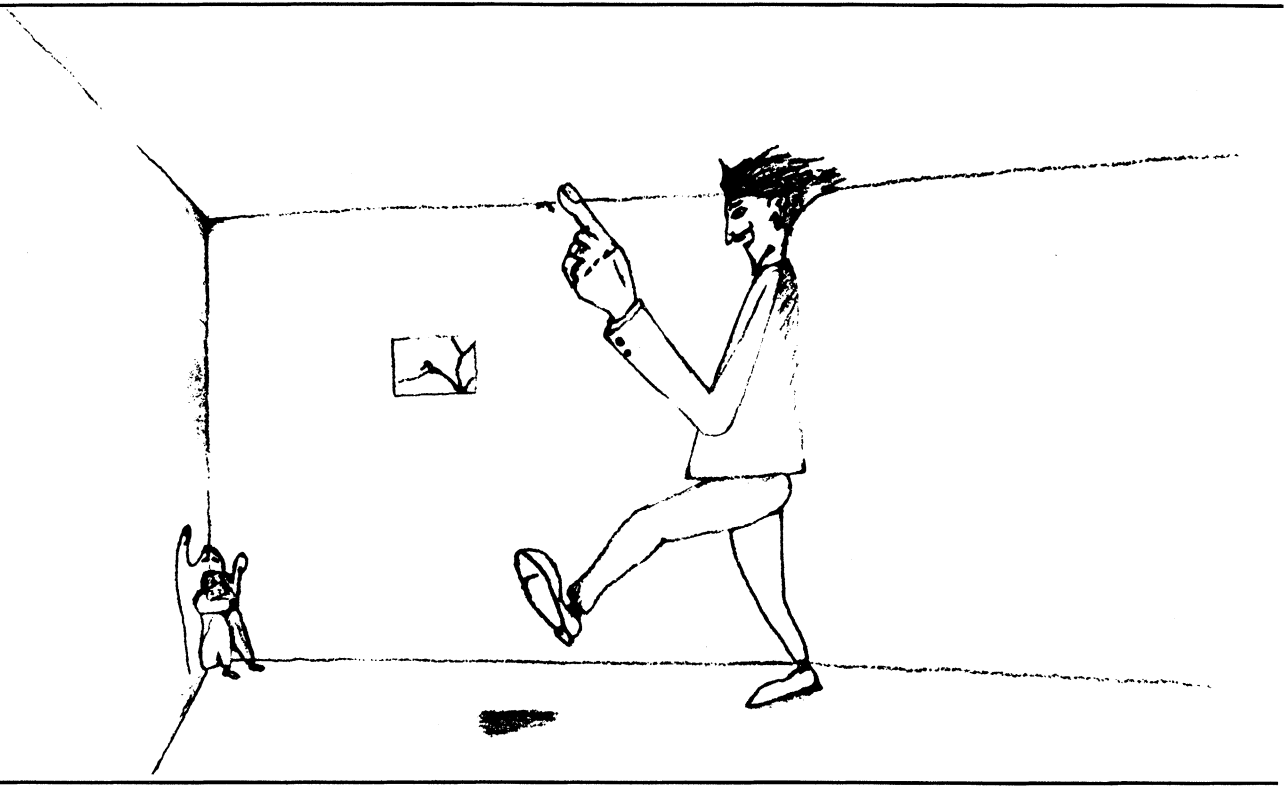


Figure 3: Dexter's Drawing

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tive. All of these processes revealed (d) the dialectic function his text served in helping mediate thought and activity: His thinking both *shaped* the text he was producing and *was shaped by* his process of creating it. Furthermore, his understanding of both the story and his graphic representation was likely mediated into a new awareness during the course of the stimulated recall interview. The following sections reveal how Dexter's composition of an artistic text illustrated and influenced his understanding of the story.

Empathizing With Characters

Dexter's empathy with the girl in the story appears to have been a starting point for his interpretation. His original reading of the story had been at the literal level. He said that he had "read it one time just to find the purpose. . . . At the beginning I was trying to figure out what was, what happened in the story."

Shortly after explaining his initial literal reading of the story, Dexter began to talk about how he had moved from reading the story literally to making connections with the characters. "I was thinking about something during the story. I don't remember what it was. Something else, I was thinking about something difficult. That's how I got involved in the story." Dexter's remarks do not make clear exactly what that "something difficult" was that had drawn him into the story. Later, though, he said, "When the mother was shaming the daughter, that part. I gave a lot of attention to it. . . . It's wrong, and, but I can relate something in my life to the story and [inaudible] draw." Dexter related a childhood experience that had influenced his depiction of the relationship between the girl and the doctor:

> Well, when I'm sad, I always—when, when I'm a kid and I'm laying down, and, I was like seven or eight, six or seven, I was laying in my bed and I was afraid of the dark, and I was afraid of snakes, and so I brought in my cover-up and I'd be afraid something would come under. It was going to [inaudible], bad was going to harm, and when I put that blanket over me, I felt secure. And so when [the girl in the story] got up against the wall, it would be protective from what is behind her, but, um, but, but she still felt insecure, and so that is why that shadow is like, you know, that shadow, I claim, is being her shame.

Dexter's remarks suggest that his empathy for the girl initiated his interpretation of the story. Transactional theorists (e.g., Rosenblatt, 1978, 1984) have argued that a reader's personal response to a text can

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be an important starting point for an interpretation. In moving from response to interpretation, Dexter switched the perspective in his text so that instead of portraying the doctor's narration it represented the relationship from the girl's point of view. He created an image of a "hysterical" doctor, yet he said, "I read the doctor as being kind but, um, but I did see that the girl had her way she's, um, receiving him and thinks he might be, and that's the way she's receiving him." The reason Dexter switched perspectives for his text is "because she was the one with the disease, the diphtheria, and, uh, also because, uh, because I can relate to her attitude when I was that age too."

The process described by Dexter illustrates how his empathic connection to the girl helped him move from an initial personal response to the production of a text that represented both his own and the girl's feelings of shame and fear. His text illustrates a shift in focus from Dexter's own feelings to the ways in which he sees those feelings played out through the girl. As Peirce's semiotic theory would predict, he is constructing meaning for the literary text by instantiating knowledge from his personal or cultural history. His transaction with the signs of the story is transformed through his transaction with the constraints, communication genres, and resources of the instructional setting to articulate a new relationship between the text he has read and the text he composes.

Graphic Representation and Transformation

In order to convey his understanding of the relationship between the characters, Dexter depicted aspects of their personas through graphic symbols. The story is narrated by the doctor. The doctor does not describe himself in the story as a terrifying figure, but Dexter, taking the girl's perspective, drew him that way. Dexter first drew the doctor's hand,

> because it was showing that his, that [inaudible] would be pointing and everything is going to be all rotten. . . . It started with the hand and then moved on to—I started with the person, and I knew he was—I—I knew I wanted a girl in the corner, and the person I just wanted to look like—how she would see the person today to him and his—how she sees his attitude—I drew a fist.

The fist Dexter drew was disproportionate to the scale of the rest of the doctor's figure and was directed toward the corner where

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Dexter would eventually draw the diminished girl. His use of size and orientation enabled him to represent syntactically through a graphic interpretation of the story the relationship he saw between the characters. The fist embodies a cultural code involving a threatening gesture that helps establish the power relationship between the doctor and the girl.

Dexter's depiction of the doctor represented his understanding of the way the girl feels threatened throughout the diagnosis. He drew the doctor's hair to represent his "bizarreness." When asked why the doctor is shown stepping toward the girl, Dexter replied,

> Dexter: To show control.
> Q: How is he doing that?
> Dexter: Well, he is controlling her, because he is controlling her emotions like—the way I think of it—before I was thinking, well, this is all these people's attitudes, the parents and the doctors, the doctor, and uh, the reason I was thinking the parents were wrong was because that's from she was programmed to honor her program the way her life's been before she learned to be, uh, to run from shame or feel ashamed a lot, and that attitude was put into the doctor too, because of the way she sees the doctor, and power comes from him making her get pushed back into the corner. He is afraid too to open her mouth to see whether or not she has diphtheria.
> Q: So he is walking toward her? Is that why that last leg is up like that?
> Dexter: Yeah.
> Q: And that's the power?
> Dexter: Yeah. Well, it's the power scaring her. It's supposed to be scary.
> Q: Uh-huh. Earlier you said you thought the doctor was a kind man. Is that what you said?
> Dexter: Yeah. I said in the story he was considered kind to my idea, but I went from the place of the girl and the way she was acting in the story to see how she, to see how the doctor was.

Dexter's interpretation of the story appears based on his empathy for the girl, even to the point of representing the doctor from the way *she* viewed him rather than the way *Dexter himself* viewed him as a reader. As he reports, the text he created was designed to convey a sense of power on the part of the doctor and a feeling of fear on the part of the girl. The size, position, and orientation of the pictorial elements represent his understanding and employment of a culturally established vocabulary of art.

In switching the perspective in his drawing from the doctor's narration to the viewpoint of the girl with whom he empathized,

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Dexter distorted the doctor's fist, hair, and walk to create a threatening effect.Dexter represented other aspects of the story symbolically as well. As noted earlier, Dexter created a shadow behind the girl to represent her shame. In contrast to the dark shadow, he drew a window to represent a sense of "contentment":

Q: Now there's a—is that thing, is that a painting on the wall, or is that a window?
Dexter: That is a window.
Q: Why did you do that?
Dexter: I wasn't sure, but I think that, it's like, it has a bird in a tree which I always [inaudible] thing, a little picture in color, I guess, but I was thinking I could show contentment being behind everything because, um, she did have it when the doctor refuses [inaudible] something good would resolve out of it or nothing would focus on that.
Q: Yeah, is that—why did you make it that size?
Dexter: Because if it were any more attention to it, then you could—it would be noticeable and the picture would be drawn wrong. It would be noticing the cheer.

In the story there had been no specific reference to such a window; Dexter created it to provide a balance that he saw necessary to the girl's feelings toward the doctor. His creation of the window again illustrates the ways in which he used size, proportion, proximity, and conventional symbols to render his interpretation of the characters and their relationship.

Situating His Text in an Intertext

In formulating his picture, Dexter situated key images of his drawing in the intertext of a film he had seen. Our understanding of intertextuality issues from Bakhtin's notion of dialogicality, in which each "text"—that is, each sign or system of signs—achieves meaning as part of a greater whole. The meaning attributed to each text is socially constructed and therefore historical in nature, with each text derivative of, and interpreted according to, a prior text or set of texts (see Bloome & Bailey, 1992). In this sense the notion of text is fluid and transactional, with each text serving to mediate and transform others. Every text is to some degree an appropriation of another and the basis for yet more.

In creating his graphic text out of *The Use of Force*, Dexter described the following appropriation of a prior text from his experience:

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Dexter: I got an idea of the way, the way this set-up is, how the drawing is, from an old Pink Floyd movie, *Breaking the Wall* [sic]. . . . It is like an old memory from when I was a kid, that, um, [inaudible] is getting out or whatever, this guy was getting out, and he was, like, and everything was real long, and the world was so big and he was this little, small, small person.
Q: Oh, so this whole idea of the perspective was from that movie?
Dexter: No, it came through my mind. I did [inaudible] use it somehow.
Q: Did that, did that image from the movie influence the way you did this?
Dexter: Yeah.
Q: How so?
Dexter: From the way I reduced all of her. She's real small.

Dexter's account reveals the convergence of three texts: the images from the film, the associations Dexter makes from the signs of the story, and the signs that he constructs to depict his vision of the relationship between the two central characters. His appropriation of the image from the film is much like our own appropriation of the text of Bloome and Bailey (1992) in order to account for Dexter's drawing, and in turn Bloome and Bailey's appropriation of Bakhtin and others whose works they cite, and in turn again all of the antecedent texts that provide the intellectual foundations for Bakhtin and Bloome and Bailey's references. Our appropriation of Bloome and Bailey is further enmeshed with other texts we have appropriated, those being the critiques of *Written Communication*'s external reviewers who suggested that we provide a better account of intertextuality, and our dialogue as co-authors in determining how to provide that account and how to phrase it in this section.

Dexter's comment that the perspective was not borrowed from the movie directly but rather that "it came through my mind" illustrates the phenomenon of ventriloquation (Bakhtin, 1981), that Wertsch (1991) describes as "the process whereby one voice speaks *through* another voice or voice type in a social language" (p. 59). As Bakhtin (1981) notes, "Prior to this moment of appropriation, the word does not exist in a neutral or impersonal language (it is not, after all, out of a dictionary that the speaker gets his words!), but rather it exists in other people's mouths, in other people's concrete contexts, serving other people's intentions: it is from these that one must take the word, and make it one's own" (pp. 293-294). Rather than simply copying the perspective from the Pink Floyd movie, Dexter incorporated the image of the film into his own representation of the relationship between the doctor and girl. In his graphic text, Dexter appropriates

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images in the same manner as one appropriates *voice* in verbal communication. His graphic text, then, is part of a continuum of texts that Dexter has had transactions with; and as we shall explore in the next section, it provides the basis for the text that he likely continues to develop through the dialogue of the stimulated recall interview.

Dialectic Function of Text

For Vygotsky (1978, 1986), the semiotic mediation of thought and activity is a dialectical process: People use semiotic tools such as speech to act on their environment, which in turn transforms their thinking as a function of that situated activity. This dialectical relationship between thought and activity is central to the claims of the "writing-to-learn" movement, whose proponents argue that writing can not only demonstrate thinking and learning in the form of situated action, but also shape and sustain these cognitive processes as well. For example, when students compose response essays, they use writing to perform a kind of situated activity such as an act of persuasion directed at peer readers or instructors or an act of reporting that demonstrates completion of an assigned task. Teachers also assign response papers, hoping that this activity will promote further thinking and lead, in turn, to a deeper responsiveness yielding still greater potential for action, and so on. Ackerman (1993) warns that "the technology of writing will not categorically bring about the intellectual and social changes" that writing-to-learn advocates generally assert (p. 351). In short, the mediation of thought and action is only *potentially*, not necessarily, available through writing and, we will argue, through the use of other semiotic tools such as drawing.

Dexter's account reveals the manner in which his thinking both *shaped the text he composed* and *was shaped by his process of composing it*. Rather than using *speech* as his means of mediating his thinking and activity, Dexter used a different psychological tool, *drawing*, from his "tool kit" of mediational means. Dexter knew when he began reading the story that he would draw a picture to represent his understanding:

Dexter: I knew I was going to draw.
Q: How did you know that already?
Dexter: Because, uh, what I want to do is work on—my artistic ability.
Q: Uh-huh. Is that something you work on a lot?
Dexter: I am just starting to because I lost my way around two years ago.

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Q: How did you lose your way?
Dexter: I didn't use it.

Rather than having a fully formed picture of the characters in his head prior to drawing, Dexter said that "at the end, I understood what I was doing more than I did when I began the drawing. . . . I got more involved in the picture as I did it." Dexter started by drawing the hand. He continued:

Dexter: I wasn't thinking about the attitude of the girl or whatever. . . . I knew I wanted everything focused on the hand. I wasn't thinking about the background yet.
Q: You didn't know what the rest of the picture would look like?
Dexter: Yeah, and I had an idea the girl might be in the corner.
Q: Uh-huh, that's interesting. You didn't really know, you didn't know what the guy would look like or anything?
Dexter: No.
Q: Or what he'd be doing?
Dexter: I knew he'd have to have big, bigger footsteps when he walked. The way he is walking.

Dexter reveals through these statements that he had envisioned roughly what the picture would look like prior to drawing, but had not filled in the specifics. His thinking about the story, especially in light of his own personal feelings of shame, helped him shape his representation of the relationship between the characters as he depicted them in his drawing.

At the same time the process he went through in composing his text helped shape his thinking about the story. In his initial reading, Dexter had simply tried to follow the action: "It was just I was really lost at first, because I don't really know how to get into the story from the start, and it takes me a page or two, you know, to understand it, so I had to go back to get it." Eventually he began "thinking about something during the story . . . something difficult" that helped get him involved in his reading. He began making personal connections with the characters, yet when he began drawing he was uncertain about how he would depict them, knowing only that the relationship between the girl and doctor would involve shame and control.

Dexter related that the meaning of the drawing changed as the picture developed. For instance, when he started his drawing Dexter had not been certain what the threatening figure would represent:

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Dexter: I wasn't really sure if it was him going to be the doctor or not until the end of the story, I mean, until the end of the drawing, because I was thinking, well, it could be this person that she, that she has imaged in her mind and uh—or this could be an analogy of diphtheria, but then I said it doesn't matter. It's just a doctor. It was going through her mind, [inaudible] but I liked to read. The first time I'd read the doctor; the second, the analogy. It's just through that one story.

Q: So you mean, even after you drew the face and everything, it wasn't the doctor yet?

Dexter: Uh-huh. I mean it could have been a lot of things. It depends on your view point of the picture, but what I was thinking is—it was the doctor and then it was an analogy of the whole attitude of the story, and then it was the, her parents' attitude, or the parents, especially her parents.

We see two possible types of mediation at work here. First of all, Dexter reveals that in his initial reading of the story he had difficulty following it on any level. His ability to make connections with the characters enabled him to engage in the type of interinanimation described by Rosenblatt (1978, p. 53) in which he infused the signs of the text with meaning and translated those meanings into new signs of his own. His transaction with the literary text was mediated by his deliberate creation of his own artistic text. Thus, his artistic text represented both his appropriation of the signs of the literary text and his recreation of meaning through personally meaningful signs that he evoked from personal experiences, images from other texts, and artistic conventions. His attribution of multiple meanings to the dominant figure in the drawing suggests that when he created his own text he ascribed meanings for that figure that he had not considered prior to having drawn it, meanings (such as the mother or a disease) that the graphic image itself does not readily suggest.

A second type of mediation likely came through the process of the interview itself. As we argued earlier the cues from the interview probably caused Dexter to reconsider and recreate his text once again. During his production of the drawing, when the teacher had intervened and asked him if the figure had represented the doctor, Dexter affirmed the teacher's interpretation without including other possible referents. When asked by the interviewer, "Why did you end up saying it was the doctor?" Dexter replied:

Dexter: Because it fits, um the way most people would look and think it is, is the way the picture, the drawing looks, by the way he looks, because

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he looks like a doctor or something—or else a lot of people— like [my teacher] asked me if that's the doctor, and yeah, you know, I guess it is.
Q: And so he asked, so was, did his, did his question influence you to call it the doctor?
Dexter: Oh yeah.
Q: The fact that he thought it was a doctor?
Dexter: Yeah.

During the interview, however, Dexter gave multiple referents for the figure. A possible way to account for his less literal, more symbolic explanation of the figure in the interview is that the prompts and probes helped Dexter perceive and articulate the multiple referents he had generated for the picture either at the time he had composed it or during the period since. Just as Dexter's perception of the teacher's question as an association between the doctor in the story and the figure in the drawing suggested a particular meaning to him, the probes of the interview could have either allowed Dexter to articulate his prior multiple referents for the figure or generate them as he participated in the dialogue. The text represented in the stimulated recall account is therefore not necessarily—or even likely—a precise rendering of the text he had created earlier in the day but a development of the text mediated by the dialogue of the interview.

DISCUSSION

Any discussion of Dexter's artistic composing process must take into account the exploratory nature of the research. Dexter's experience represents a single case in a unique situation. We cannot separate Dexter's production of his artistic text in the situation we have described from the unique convergence of his own formative experiences with art as a child, his success with art amidst other academic difficulties, the open-ended and therapeutic environment of the alternative school, the artistic understanding of his teacher, the broad communication genres valued in his classroom, and the dialogue of the stimulated recall interview that enabled him to articulate and no doubt develop his understanding and representation of his text.

We do not therefore see drawing as a technology that *necessarily* mediates thought and activity, but—like writing—as a cultural tool, situated in a social context, that can *potentially* serve a dialectic function. Dexter's account of his drawing suggests that art, for him, is a

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unique mode of learning, one that he has used since early childhood for pragmatic and expressive purposes, and one that is valued in his classroom as a means of constructing meaning for the story he has read.

Recalling Ackerman's (1993) critique of the claims for "writing to learn" activities as an agent of change rather than being one part of a multidimensional restructuring of instructional values, we view Dexter's artistic text as an illustration of what is potentially available in educational settings, particularly for students such as Dexter who have had difficulty performing within the communication genres provided by conventional schooling. Situated in a context that approved and encouraged his own unique rendition of the signs of the literary text, he was able to make meaning through tools that were appropriate to both his own historical and cultural means of communicating and the school setting that valued their use for literary interpretation and other aspects of rehabilitation therapy.

Dexter's production of his text took place in an environment that supported the use of cultural tools through which he and his classmates could construct personally meaningful sign systems. Lave, Murtaugh, and de la Rocha (1984) argue that the context of activity "refers to a relationship rather than to a single entity" (p. 71); "activity is dialectically constituted in relation with the setting" (p. 73). As we described in our account of the instructional context of the study, Dexter and his classmates had participated in a dialectic relationship with their environment in helping to constitute the rules of the communication genre that ultimately developed in their classroom. As the teacher encouraged more variety in their expression, the students, as evidenced by the "air guitar" episode, helped to define the terms and limits of their vehicles for meaning-construction. Dexter's drawing—as well as the choreography, sculpture, music, drama, and other vehicles used by students to mediate their response to *The Use of Force*—thus fell within a genre of literate activities agreed on by the members of the classroom.

Dexter's classroom thus mediated the development of forms of literacy appropriate to the growth of individual students in their social and academic transactions. The classroom creates an essential social context fostering "mastery of and conscious awareness in the use of . . . cultural tools" (Moll, 1990, p. 12). Sociocultural theory stresses the dialectical interpenetration of intellectual development, on the one hand, and social, practical activity mediated by cultural tools, such as speech and writing, on the other. Wertsch (1991) makes a similar argument, claiming that the mind "extends beyond the skin" (p. 14):

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> Rather than something that is appropriately predicated only of the individual, or even of the brain, mind is defined here in terms of its inherently social and mediational properties. Thus, even when mental action is carried out by individuals in isolation, it is inherently social in certain respects and it is almost always carried out with the help of tools such as computers, language, or number systems. (p. 15)

To both Moll and Wertsch, then, the tools of mediation that make up the social context of learning and the cultural values that support their use provide the foundation for all learning and cognitive development (see Díaz, Neal, & Amaya-Williams, 1990; Leontiev & Luria, 1968; Tudge, 1990).

The stimulated recall interview has provided a window—one with its own capacity for refraction—into Dexter's text processing and subsequent text construction. His thinking and activity are mediated through a number of means, including the zones of proximal development provided by the social context of the class, the psychological tool of drawing, and the scaffolding of the stimulated recall interview.

The whole of his text production is inextricably tied to the context of its creation. We see the types of communication genres established in classrooms as structuring the convergence of values, politics, discourse conventions, social transactions, cultural tools, and other factors that make up an instructional environment. Communication genres can enable student learning when they create social contexts—zones of proximal development--that enable students to use cultural tools productively. In Dexter's case the classroom in which he produced the text we have discussed provided a context that enabled him to perform in a way that was valued as literate.

Of course Dexter presents an unusual case in terms of the hearing loss that fostered the development of his artistic capacity, the chemical dependency that brought him to the facility, and the many other factors that make him unique; we are not arguing that schools should be restructured to accommodate one student. Yet we do see his case as representative of many students who perform poorly in school, not because they lack intelligence but because the communication genres through which they are evaluated are narrow and thus preclude a great range of potential vehicles of meaning construction.

Dexter's case, therefore, does suggest a need to reconsider how the communication genres in classrooms tend to invest one sign system—writing—with incarnate powers of expression and transformation. The view strikes us as parochial, ignoring the roles of art, music,

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dance, architecture, and other cultural tools in transforming the human spirit in the course of human history (see Gardner, 1983). The work in social semiotics emerging from Peirce (Hartshorne & Weiss, 1931-1958) questions the privileged status of any sign system as a vehicle for making meaning. Moll (1990) has argued that schools should emphasize

> joint literacy activities mediated by the teacher intended to help children obtain and express meaning in ways that would enable them to make this knowledge and meaning their own. . . . This perspective is consistent with what Vygotsky (1987, chap. 6) felt was the essential characteristic of school instruction: the introduction of conscious awareness into many domains of activity; that is, children acquiring control and mastery of psychological processes through the manipulation of tools of thinking such as reading and writing. (pp. 14-15)

In addition to the conventional tools of reading and writing, we would urge the broadening of communication genres to include other forms of mediation as well to accommodate the cultural practices of a wider range of students.

The issue we raise is related to an old educational dilemma, the tension between the need to socialize students to the values of society and the need to recognize the uniqueness of the individual. We do not see the goals as being incompatible, for the cultural practices of our society and work opportunities available to citizens require the use of an infinite array of sign systems (see Gardner, 1983). Dexter's experience suggests that the alternative school environment we have described has something to teach conventional classrooms about the potential for student growth that is possible through a broadening of the communication genres—and creation of multiple zones of proximal development—through which students have opportunities to learn.

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