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Classroom Discourse: A Key to Literacy

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LITERACY, LANGUAGE, AND SCHOOL FAILURE

Across the nation, anxiety about education runs deep, none more powerful than the issue of literacy. Schools are the institution set up to teach reading and writing and the subjects rooted in these activities, including science, social studies, literature, and mathematics. Despite intense effort, schools are seen as failing to meet these obligations. Witness front page headlines such as the following:

- It's Official: OUR KIDS CAN'T READ (New York Post, 1999, story on the failure of the majority of New York State fourth graders on a new achievement test) and
- Students Taking Test Crucial to Schools "We've been gearing (up) to this for the entire year." (San Diego Union-Tribune, 1999, story on the massive effort in California's schools to raise achievement scores.)

Although the difficulties may have been overblown by the media, the statistics are dismaying. A comprehensive U.S. government report conducted by the National Institute for Literacy (State of Literacy Report, 1992) found that on a scale of I to V, over 45% of adults in our country fall into categories I and II—categories that reflect a "quite limited repertoire" of literacy skills, which render them unable to deal with many tasks considered essential for daily life.

This chapter addresses a component of the problem so overlooked that it may not even be perceived as pertinent. That component is the role of school discourse in the attainment of literacy. Although interest in school

discourse has surged over the past several decades (Bernstein, 1975; Cazden, 1986; Christie & Martin, 1997; Delamont, 1983; Dillon, 1988; Donoahue, van Tassell, & Patterson, 1996; Eder, Evans, & Parker, 1995; Flanders, 1970; Hicks & Hicks, 1996; Kutz, 1997; Mehan, 1979; Stiller, 1998), little of the effort has been aimed at linking the language spoken between teachers and students with the students' mastery of written language.

The neglect is understandable. Although spoken language is deemed prerequisite for written language, the two language systems are markedly different and serve different purposes (Allwright, 1998; Blank & White, 1998; Brown, 1998; Halliday & Hasan, 1989; Horowitz & Samuels, 1987; Lemke, 1995; Sinclair, Hoey, & Fox, 1993). Paradoxically, the differences are precisely the reason why linkages between the two systems should be explored.

The disconnection between spoken and written language means that students who are not regularly exposed to written language experience it as foreign. The strangeness, of course, vanishes with steady use. For a high percentage of children, however, that steady use does not happen. Students, parents, and teachers, in a rare display of unanimity, agree that reading is a low priority activity that is avoided whenever possible. Despite efforts to change these patterns, our high tech, multimedia society makes a significant turnaround unlikely.

Within this context, school discourse occupies a unique role. Unlike most spoken language situations, the talk of the classroom does revolve around written language; specifically, the texts of the curriculum. This factor is responsible for so much of the school day—from first grade through college—being taken up with discussions about assigned readings. From the Pied Piper in a second grade literature unit, to the Revolutionary War in a fourth grade social studies unit, to concepts of ecology in a sixth grade science unit, to concepts of algebraic measurement in a ninth grade mathematics unit, classroom discourse is clearly deemed to be a handmaiden to literacy.

For students who are conversant with "book language," classroom discussion is an additional source for dealing with the curriculum. For students who are not conversant, class talk occupies a different position. It offers their only opportunity to learn how to translate the "alien" language of written text into something that is comprehensible; it represents the sole vehicle for "written language novices" to figure out what book language is all about.

It may be the case that classroom discussion, by itself, cannot fill the gap that exists between students' spoken language skills and the unfamiliar demands of written text. But we are far from having to reach such a disheartening conclusion. At this stage, our focus should be on exploring the potential of school talk to meet the challenge that exists. That is the purpose of this chapter, which targets the following three components of the "literacy-classroom discourse" constellation:

- identifying key features of books that render their language so difficult for many students;
- determining key patterns of classroom discourse and the role they play in complementing literacy;
- defining modifications in classroom discourse that might further the attainment of literacy.

SOME KEY FEATURES OF "BOOK LANGUAGE"

Years before they enter school, children develop a broad range of (oral) language skills. Prior to reading a word, they can produce long, complex sentences, convey ideas about their observations, relate events they have seen, and create imaginary scenarios. Their accomplishments are truly impressive, leading to the commonly held belief that the basis for mastery of book (written) language is in place. In other words, the children's oral skills are often seen as sufficient for literacy skills (see Blank, Marquis, & Klimovitch, 1994, 1995).

This assumption is called into question by examining the sorts of texts children are expected to read even in the early primary grades. The following segment, from a book on fossil formation designed for second to third grade students, represents one such example.

> For millions of years the bones lie under the ground. Rain falls. It seeps down through the ground, dissolving minerals in the rocks. The rainwater carries the minerals along as it trickles down, down to the bones.
>
> Like all bones, the Brontosaurus bones are filled with holes too small to see. The rainwater seeps into the holes. The water evaporates. But the minerals in the water stay and harden in the bones. Little by little what once was bone turns to stone. The bones are now stone fossils. Earthquakes rattle these fossil bones around. Volcanoes erupt and bury the bones under layers of lava. Glaciers drag tons of ice and snow over the bones. Oceans flow over the land. Their currents lay tons of sand and broken shells over the bones. The weight presses on the mud around the bones. Slowly the weight turns the mud around the bones to stone too. (McMullen, 1989, pp. 8–10)

Among the potential difficulties are limitations in decoding, or deciphering, the printed words; those, however, are not the problems of relevance here. Our concerns are with comprehension. Even when the text is read aloud (so that decoding demands are minimized), the language can still be overwhelming for many youngsters. Years of conversation leave them unprepared for sentences like: *The rainwater carries the minerals along as it trickles down, down to the bones* or *Like all bones, the Brontosaurus bones are filled with holes too small to see.* That is not how people talk to one another.

Many factors are behind the chasm separating the spoken language of everyday life from the written language of books. Everyday language is characterized by high-frequency words, short sentences, and the "here and now" topics of personal interest, whereas book language uses low-frequency words, longer sentences, and the "there and then" topics of the impersonal curriculum. To see how powerful the differences can be, two features of book (text) language are analyzed at length. They are

- the verbal concepts cascading through the material; and
- the implicit, invisible language that permeates the text.

The Verbal Concepts of Text

School texts are concerned with the exposition of knowledge-based topics—topics that are laden with complex verbal concepts (e.g., the settlement of the west, the development of scientific tools, the habitats of animals; Anderson, Spiro & Montague, 1977; Brown, 1998; Hirsch, 1988; Kintsch & Keenan, 1973; Vygotsky, 1962, 1978). Words critical to the meaning of the text pile on, one after the other—like an avalanche of information.

In the aforementioned segment on dinosaurs, for example, primary grade students are required, within a 1-min time span, to deal with such terms as *minerals, dissolve, trickle, evaporate, fossil, erupt,* and *currents,* and the way these terms link in the passage. It is one thing to know the word "rattle" in its common use. It is quite another to conjure up a reasonable meaning in connection with bones being thrust about by an earthquake. In addition, the concepts steadily intermesh with one another to create a coherent message. The process is then repeated page after page, resulting in a slew of concepts appearing at an incredibly rapid rate.

In offering these texts, educators assume that students know the concepts in question and are able to manipulate, combine, and apply them so as to glean a meaningful message. When the skill is not in place, however, the confusion can be overwhelming.

The following excerpt, from another primary school text, conveys a flavor of what the experience might be like. It does so by replacing seven of the original concepts with nonsense words, resulting in a modification of only 17 words, or 12% of the passage.

> Smith had made a promise. But could Turboland keep it?
>
> By 1961 some jabots had reached a few hundred kiloms up into the surrounding belt. But the glerf was almost a quarter of a million kiloms away!
>
> A trip to the glerf and back would take eight yims. By 1961 only one Turbian had even been up in a jabot-and for only fifteen stashes!

> Just aiming for the glerf was a problem in itself. A jabot couldn't be aimed at where the glerf was in the belt because the glerf moves about 50,000 kiloms each day. Scientists would have to aim at an empty spot in the belt where the glerf was going to be by the time the jabot got there. It would take some very careful figuring out. If there was a mistake, the jabot would go off into the belt forever!

The original text is:

> Kennedy had made a promise. But could America keep it?
>
> By 1961 some rockets had flown a few hundred miles up into space. But the moon was almost a quarter of a million miles away!
>
> A trip to the moon and back would take eight days. By 1961 only one American had even been up in space-and for only fifteen minutes!
>
> Just aiming for the moon was a problem in itself. A rocket couldn't be aimed at where the moon was in the sky because the moon moves about 50,000 miles each day. Scientists would have to aim at an empty spot in space where the moon was going to be by the time the spacecraft got there. It would take some very careful figuring out. If there was a mistake, the spacecraft would go off into space forever! (Donnelly, 1989, pp. 19–20)

Now it all makes sense—but only because you already knew the words that are critical to meaning. The consequences of a limited concept base are profound. A small percentage of unknown words can wreck the chances of effective comprehension.

The Implicit, Invisible Meaning in Text

Texts are composed not simply of words, but of "ensembles of sentences" (Scinto, 1986, p. 109), which combine to create a unified message. The discrete sentences can do their work only if the overall text is coherent (i.e., written so that the text can be interpreted as a whole, rather than as an unorganized collection of words; Blank, 1987; Goldberg, 1998; Halliday & Hasan, 1976, 1989; Schnotz, 1984; Schilperoord & Verhagen, 1998; Stiller, 1998; Tannen, 1984).

Coherence is, of course, dependent on the skill of the writer. Published writers fortunately demonstrate this skill; but a writer's production of coherence is not sufficient. The reader must know how to link the separate sentences so as to extract a unified message. For example, consider again the segment offered earlier on fossil creation.

> For millions of years the bones lie under the ground. Rain falls. It seeps down through the ground, dissolving minerals in the rocks. The rainwater carries the minerals along as it trickles down, down to the bones.

The sentence, *Rain falls,* seems to come out of the blue. Why should an event connected to the weather suddenly appear in a discussion involving bones lying under the ground? Admittedly, it is one of the events that takes place while the bones are under the ground, but lots of events have taken place as well (e.g., other animals appeared in evolution, plants grew, many other forms of weather occurred, etc.) Further, once rain is mentioned, the topic of bones seems to disappear as the passage goes on to describe the action of the rain (seeping down and dissolving minerals). Then, just as suddenly, it re-emerges at the end of the paragraph.

For unskilled readers, the text is meandering in unpredictable directions, with concepts appearing and disappearing for no apparent reason. For skilled readers, the experience is totally different. They have learned to "see" the hidden logic connecting the sentences so that they know that the text's intended meaning is something to the effect:

> For millions of years the bones lie under the ground. *Although they are deep underground, they are affected by events that take place above ground. One such event is that* rain falls. *Although the rainwater first hits the surface, it does not stay there, on top of the ground. Instead,* it seeps down into the ground *and begins a process that will affect the bones. Gradually, after it goes underground,* it dissolves minerals *that it has contact with* in the rocks. *So now it is not simply rainwater, but rainwater with minerals in it. Next, that* rainwater, with the minerals, trickles down, down to the bones …

The "invisible connections" (in italics) are often more extensive than the text itself. With the introduction of these connections, the text can be understood. Without it, there is bewilderment. For text to be comprehended, the reader must steadily bring in the invisible system that links the sentences together.

Readers have rarely been told that they must engage in this sort of "filling in" process, but it is what they are expected to do (see Beck, McKeown, Sinatra, & Loxterman, 1991). The creator of the text assumes that the reader possesses this ability and is able to introduce it throughout the text. Implicit messages are the invisible, essential support system for the language of the curriculum.

"Everyday language" generally does not impose demands for this type of implicit meaning. Serving different functions, it is permitted to jump from topic to topic. A conversation between friends can, without confusion, skip from a selecting a place to eat, to concern about the weather, to vacation plans for the summer, to chatting about a friend. Rarely is there the need to cope with the sort of coherence required by the language of literacy. Consequently, students whose experience is restricted to the nonliterate world have little understanding of the skills required for coherence. Here is another source for their experiencing school texts as a foreign language.

Given the vast differences between the language of everyday life and the language of classroom texts, the failure rate reported around the nation is not surprising. Indeed, it is to be expected. At the same time, it cannot be tolerated. What can be done to reverse the situation?

PATTERNS OF CURRENT CLASSROOM DISCOURSE

As noted, for many students, the spoken language of the classroom offers the sole opportunity for reviewing and evaluating the content of literacy and, in so doing, revealing the properties of written language. To determine the effectiveness with which classroom discourse meets its potential, it is worthwhile to examine instances of teacher–student exchanges. Consistent with the discussion just mentioned, the exchanges offered next will be analyzed for their handling of the twin issues of verbal concepts and implicit meaning.

Verbal Concepts: Their Role in Classroom Discourse

Segment 1: A Preschool Class
(the children are selecting and describing objects)

Teacher: Well, let's see Steven. Would you like to go into the box and pick out something.

Steven: (selects a multicolored ball)

Teacher: What's that? You just look at it. What's that?

Child: A ball

Teacher: (exclaims) A ball!

Teacher: What colors are in the ball, Pauline?

Pauline: Red.

Teacher: *Any other colors?*

Pauline: (*shakes head*)

Teacher: *Peter, could you tell Pauline what other colors are on the ball.*

Peter: Orange, yellow, and blue…

Segment 2: A first grade class learning early decoding skills
(the teacher has written the word "horse" on the board)

Teacher: *If you know what the word is, raise your hand.*

Ann: *Honey*

Teacher: *Who else wants to try?*

Michael: Horse

Teacher: (writes another word on the board) Who knows this one?

Segment 3: A high school class on health
(the topic is the AIDS crisis)

Teacher: All right, why are we suddenly so conscious of AIDS ? Sabrina?

Sabrina: Because it's in the straight community now.

Teacher: Right. *Why is AIDS so scary? Shawn?*

Shawn: *It's fatal.*

Teacher: I see. *Does AIDS kill? Curtis?*

Curtis: *No. It breaks down the cells in your immune system to let other diseases kill you.*

Teacher: That's it. You die of opportunistic diseases. Now if we are going to have intercourse, what should we do to stop AIDS? Jenny?

Student: Use condoms. (Davis, 1987, p. 40)

Segment 4: A high school class in social studies
(the topic is international trade)

Teacher: *For instance, what were your 1934 Reciprocal Trade Agreements? How did they work? What were they designed to do? Ellen?*

Student: I don't know.

Teacher: *We studied that just last week when we were studying the New Deal. All right, Ron?*

Student: Well, we agreed, I think we agreed to lower the tariffs for import duty in our country. Then the other country would reciprocate by agreeing to lower theirs.

Teacher: Very good. (Bellack, Kliebard, Hyman, & Smith, 1966, p. 34)

Segment 5: A high school class in literature
(the discussion is of Romeo and Juliet)

Teacher: (reads a segment from Act II) *What does she mean, Sylvia, when she says it is "too rash, too sudden"?*

Sylvia: *I don't know.*

Teacher: James, do you think she is talking about the marriage contract at the top of page 78 when she says, "It is too rash, too sudden."?

James: Yeah.

Teacher: So how does she feel about getting married, James?
(Haroutunian-Gordon, 1991, p. 102).

This type of teaching is so predictable and pervasive that it is regularly found in almost any film depicting classroom scenes. The following excerpt from the film, *Hope and Glory* captures the process. In this exchange, a class at about the 4th grade level is "discussing" England's empire.

Teacher: (tapping on map of world) PINK! PINK! PINK! PINK! What are all the pink bits? Rowan!

Student: (stands up) They're ours, Miss.

Teacher: Yes, British Empire. Harper!

Student: (stands up)

Teacher: *What fraction of the Earth's surface is British?*

Student: *I don't know, Miss.*

Teacher: Anyone … (walks among rows) Jennifer Baker!

Student: Two-fifths.

Teacher: Yes. Two fifths. Ours! That's what this war is all about. Men are fighting and dying to save all the pink bits …

This exchange is nearly indistinguishable from the "real" ones offered because it contains the same simple, invariant patterns that have been the coin of the classroom realm since the start of mass education (see Blank & Klig, 1982; Blank & White, 1986; Dillon, 1988; Flanders, 1970). In all these excerpts, the language, like book language, abounds with verbal concepts. Indeed, the interactions are remarkable for the number of concepts raised in short periods of time. The process is ubiquitous, cutting across the developmental span—from asking a preschooler, *What colors are in the ball?* to asking a high school student to explain the meaning of *too rash, too sudden*?

At the same time, the exchanges are not structured in ways that will enable students to grasp the concepts that elude them. The questions come at too rapid a pace to permit an understanding of the unknown to emerge. Instead, the queries clearly presume that the students already possess the sought-for information (through assigned readings, discussions with peers and parents, etc.). As a result, classroom discourse serves largely as a test of the students' acquired knowledge rather than as a vehicle for teaching concepts not yet mastered (Blank & White, 1986).

Students who have the information may not be unhappy with the system. Although the inquiry may not represent a judicious use of time, the students themselves may be satisfied. Their effective responses earn them admiration and good grades. For students who do not have the information, the process is fraught with problems. It not only fails to teach what they need to learn, but it also regularly evokes failure (see Blank, 1972)—a process that can, and does, devastate many students. (Instances of "wrong

response sequences" are in italics in the discourse segments just cited.) The following description summarizes the consequences on one scarred veteran of the experience:

> School had been unremitting torment for him. … The scars left by his school experiences reached down to his very soul. No amount of love or admiration … ever totally erased his low self-esteem or the conviction that he was unable to learn. (Schell, 1999, p. 36)

Implicit Meaning: Its Role in Classroom Discourse

The segments just cited illustrate not only the use of concepts in classroom discourse, but also the handling of implicit meaning (i.e., the extent to which students are helped to see the intricate, unstated mesh of connections present in an expository topic). Reconsider, for example, the Hope and Glory excerpt from the point of view of a student who has never been in that particular class. For such a individual, the words, *PINK! PINK! PINK! PINK! What are all the pink bits?* would almost certainly evoke bewilderment. No topic has been set forth. Only a few disconnected words have been blurted out.

What accounts for the teacher's behavior? Because her purpose is not to confuse the students, she must be working under the assumption that the question is legitimate. For her, the presence of the map and the lands pointed to make it "clear" that the topic is the "extent of the British empire" (Brown, 1998). It is as if she were saying,

> Here is a map of the whole world and on this map, there are countries and regions in every continent that are colored pink. That pink is not just arbitrary. It has a message and that message connects all these lands to Great Britain. What is the connection to Great Britain?

But she does not say any of those things. The teacher's language is even less "spelled out" than is the language of books. The following exchange from a junior high social studies class shows a similar instance in the "real" world of teaching.

Teacher: OK, current events. Glenn?

Student: Pablo Casals, the well known cellist died at age 96.

Teacher: OK, shush. Jim?

Student: The war in the Middle East is still going on.

Teacher: Is it going on in the same way? Frank?

Student: Egypt asked the Syria to intervene. They want a security meeting or a quick meeting of the U.N. Security Council.

Teacher: OK. For what reason? Do you know? Anyone know why Egypt has called a meeting of the Security Council of the U.N.? What has the Security Council just initiated?

Student: A cease fire.

Teacher: A cease fire. So what is Egypt claiming?

Student: Israel violated …

Teacher: Israel violated the cease fire. And what is Israel claiming? (Peshkin, 1978, p. 102).

Just as the cinematic teacher assumed that everyone would understand the words, "Pink, pink, pink," this teacher assumes that everyone will understand the question, "Current events?" Were this question to be raised in a novel setting, its inappropriateness would be apparent. Someone interested in a meaningful discussion would not start off with a disconnected phrase such as "Current events?" but rather with a more expanded utterance such as "What do you think of the latest developments in the mid-East?" The topic would be explicitly stated.

The problems of overly implicit language can be seen by transforming the question–answer pattern into statement form so that the text mirrors the usual format for presenting expository text. The Middle East discussion in statement form would be:

The war in the Middle East is still going on. It's not going on in the same way. Egypt asked Syria to intervene. They want a security meeting or a quick meeting of the U.N. Security Council. There is a reason Egypt has called a meeting of the Security Council of the U.N. The Security Council has just initiated a cease fire. Egypt is claiming that Israel violated the cease fire.

The text is meaningful in that an experienced listener, or reader, could garner the main message. At the same time, the language is near telegraphic. Ideas that call for elaboration are stripped to bare essentials. It is as if the "connective tissue" is missing, leaving the message even more implicit than written text. Once again, students who have cracked the code of classroom discourse can figure out what is going on. For students in difficulty, however, the situation fails to offer them the redundancy and elaboration they must have to extract a meaningful message.

POSSIBLE MODIFICATIONS IN CLASSROOM DISCOURSE

The patterns of classroom discourse are not arbitrary. Their ancestry can be traced to the forces operating on public education at its inception. The aim was to attain literacy at the lowest cost possible. Resources were minimal,

with often only a single book to a class. Teachers, seeking assurance that the material has been read and retained, would test the students' knowledge of the book contents. The result was the emergence of the now familiar and ubiquitous memory-based question–answer format (see Blank & Klig, 1982). As so often happens with the first in a system, the technique took firm hold. Like the QWERTY keyboard, a form constructed to meet the constraints of one period has continued on, well past its point of usefulness.

If students are to have a better chance at success, change is essential. Clearly, a variety of options must be explored before determining the techniques that work best. The material that follows provides the outlines of one approach (see Blank et al., 1994, 1995). Consistent with the issues just raised, its focus is on providing a system that enables students to grasp the *verbal concepts* and *implicit meaning* of text. Among the principles governing this approach, four are central. These are:

1. High levels of redundancy: New ideas cannot be mastered through one or two exchanges. Sustained examination of an idea is essential and it can be achieved through the use of redundancy, that is, repeating the essence of an idea over a prolonged set of exchanges. At the same time, the repetitions are never identical; rather they are structured to contain the variation (in wording, materials, etc.) needed to ensure attention and motivation.
2. Extensive use of comments: The implicit must be made explicit. For this to occur, it is essential to present the "missing information." Questions, by their very nature, can rarely provide the implicit information students need to recognize. The only reasonable option is to impart the information in comment form. Accordingly, in a high percentage of the exchanges, elaborated comments should form the bulk of the teacher's utterances.
3. Varied, but simple questions: Although they occupy a smaller percentage of the exchange than is usually the case, questions continue to serve a vital role in getting students to actively process the information being offered. At the same time, their failure-generating power is controlled by constraining the questions so that they (a) are simple enough to be easily answered, (b) are not based on the assumption of an already acquired knowledge base, and (c) require higher level processing (e.g., prediction, inferences) only about ideas that have been demonstrated within the lesson.
4. Integration of physical (nonverbal) materials: Once past the preschool period, the teaching of concepts relies heavily on verbal explanation. This can be overwhelming, particularly for students with limited verbal mastery. The problem is dramatically eased by extensively inte-

grating physical materials into the scenario and by dissecting the analysis of the materials in the slow, detailed way needed to take in new information.

This constellation of principles is reflected throughout the sample lesson that follows. The content involves a second- to third-grade text on the gold rush in California. In the preceding lesson, it was established (via text and discussion) that a man [Marshall] has been laughed at for predicting that the land he was working on might contain gold. Then one day, on finding a sparkling nugget, he believes his wildest dream may have come true. So he "bursts" into his boss's office [Sutter] to show his find.

The text to be discussed is:

> Sutter peered at the nugget. "Well," he said, "it *looks* like gold. Let's test it."
>
> He got down an encyclopedia.
>
> He read that gold is softer than any other metal. A piece of gold the size of a pea can be stretched into a wire that is two miles long. Gold can be pounded so thin that you can see a greenish light shining through it. Gold is eight times heavier than stones and sand. Gold is sturdy, yet soft. It will not rust or tarnish.
>
> Sutter and Marshall tested the rock. They pounded it. It flattened easily-just like gold. They weighed it. It was heavier than a whole handful of silver coins. They rubbed acid on to see if it would rust or tarnish. Nothing happened!
>
> Marshall got wild with excitement. He spun around the room. "Gold! Gold!" (McMorrow, 1996, pp. 7–10)

The lesson is divided into three columns (see Table 6.1). The column on the left, titled *Instructional Discourse,* presents the language the teacher actually uses. The column in the center, titled *The "Why" of What Is Taught,* offers the rationale for what the teacher is doing. The column on the right, titled *The "What" That Is Excluded* indicates patterns of current classroom practice that have been avoided.

The center column, The "Why" of What Is Taught, deals with queries commonly raised about the teacher's specific utterances. It is worthwhile to address other concerns that are not directly linked to the specific exchanges. One concerns the length of the lesson. It seems so long! In fact, this is not the case. Although it takes considerable space on a page to detail meaningful discourse, in real time, the exchange moves quickly and there is a steady give and take. Rarely do students have to listen for as long as 20 seconds before having to take an active role (through having to perform an action or answer a question).

TABLE 6.1
Classroom Discourse

Instructional Discourse	*The "Why" of What Is Taught*	*The "What" That Is Excluded*
• Material in bold represents the actual content from the book. • Underlined material represent questions and commands which require student responses. • All other material generally represents "making the implicit explicit."	The (unstated) theme underlying this segment might be phrased "Using Rigorous Testing to Turn a Dream into Reality." Each exchange is tailored to develop and impart this idea …	
At this point, the book says **Sutter peered at the nugget. "Well," he said, "it *looks* like gold. Let's test it."** Keep in mind that finding gold is something special. Many people, including the ones who laughed at Marshall, would not have believed that the nugget might really be gold. If they didn't believe it, what might they say?	The (unstated) concept of "potential" (implied via "looks like" and "let's test") is central. To help students recognize the significance of Sutter's response, they are provided—in comment form—with (hypothetical) alternative reactions.	Questions on knowledge of the topic (e.g., "*Who knows what the gold rush in California was? When did the California Gold Rush take place?*"). If this information is needed, it should be supplied.
That, of course, is not what Sutter said. What did he say?	They are then asked to use and extend those reactions to answer a series of questions focused on having them realize (a) the expression of possible alternative reactions and (b) the significance of what Sutter actually did say.	Analysis of vocabulary which is not central to the text (e.g., *peered*).
But still what he said does not mean that he believes it **is** gold. He said "looks like" which means that he believes it **might** be gold. So what he would like to do now is to figure out if it **really** is gold. So how does he propose to do that? What does he say he wants to do to see if it is gold?	Some complex questions (e.g., *how does he propose to do that?*) are not aimed at eliciting answers, but at helping students adjust to hearing difficult material. A simpler version of the question follows—that is the version be answered (*what does he say he wants to do to see if it is gold … ?*)	Demands for major inferences (e.g., "Why do you think he wants to test it?")

Yes, he says: "Let's test it"" Now we've got to figure out just what he means by that. We can begin to figure it out by going to the next sentence. What does it say? Right, it says, **He got down an encyclopedia**. That's the kind of book we've used a lot to look up information. Remember, we used this book (taking out encyclopedia that had been used by class). We used it when we were studying birds and we needed to find out ….	The question ("*what does it say?*") aims to get the students to note the encyclopedia (in anticipation of the role it will play). It aims at helping students link (known) encounters with material in the text. (If they fail to see the link, there is still no interference with the flow of the discourse since no questions are asked about this noncentral point).	Questions concerning the students' opinions (e.g., "*Do you think it is … ?*" "*How would you feel … ?*") are not relevant to the text at this point. The focus here is on making a determination, and not (yet) on the feelings associated with the determination.
But let's see what information Sutter is looking up. Remember, he wants to determine if the nugget IS gold. So what does he find out from the encyclopedia? It says: **He read that gold is softer than any other metal. A piece of gold the size of a pea can be stretched into a wire that is two miles long. Gold can be pounded so thin that you can see a greenish light shining through it. Gold is eight times heavier than stones and sand. Gold is sturdy, yet soft. It will not rust or tarnish**. The book is saying lots of different things, but all the different things relate to gold. It's giving a series of features, or attributes, of gold. Features or attributes refer to the way something looks, or feels, or sounds. For example, one feature the encyclopedia mentions is the softness of gold. You've had experience with soft things—like these marshmallows or this bubble gum. The softness of things like this allow them to be stretched or pulled. Here's the gum. Try stretching it.	*Feature or attribute*, though not explicitly mentioned in the text, is a central concept organizing the disparate facts and so, is introduced to help students cluster the information under discussion.	Questions relying on an assumed knowledge base (e.g., "*What kinds of tests could he be talking about?*")

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TABLE 6.1 (*continued*)

Instructional Discourse	*The "Why" of What Is Taught*	*The "What" That Is Excluded*
What happened to the gum? And the softness of these sorts of things also allows leads them to become very thin when they are pounded. Let's see how that works. Here (offering relevant tool) try this (on the marshmallow). What happened with the pounding?	The introduction of physical material, the command to perform an action ("*try stretching it*") and the subsequent question (on the result of the action) are aimed at focusing the students on one of the testing criteria for gold. A comparable sequence (to the one just mentioned) is repeated on other material (reflecting the concept of redundancy with variation).	Questions involving 'personal' (nonshared) information (e.g., "*Do you have an encyclopedia? When do you use it?*," etc.). Although intended to encourage recognition, these questions can draw attention away from the text.
What feature, what attribute do the gum and marshmallow have that caused them to react in the way they did to the stretching and pounding?	The question is designed to get the students to use one of the defining criteria (*feature*) just introduced.	Questions about the findings from previous encyclopedia searches (such questions will take the topic astray and lead to potential confusion).
Now what did the book say about the softness of gold? So if it is gold, what should happen to Marshall's nugget if they try to stretch it? And if they try to pound it?	This series of questions is aimed at having the students (a) refocus from the peripheral material (of gum and marshmallow) to the main material (of gold), and (b) use the information just observed (on the peripheral material) to predict the response of gold to the same tests.	Questions about noncentral characteristics (e.g., "*What is the color of the light when it goes through gold? How much heavier is gold than rock?*")
Softness is just one feature of gold that the encyclopedia mentions. It also talks about another feature, or attribute, of gold. What feature is mentioned next?	The discussion shifts from softness to weight. The comments and question are aimed at having students recognize this shift, within the overriding concept of *feature*.	Questions relying on an established knowledge base such as those comparing metals (e.g., "*How do most metals feel? In what ways is gold different from other*

Weight is how heavy something is. Which of the sentences that we read refers to the weight of gold? Let's see the kind of information they will get from weighing. Let's take another marshmallow. And now over there, are a group of stones. Find one that is about the same size as the marshmallow. Now let's weigh the marshmallow and the stone on this scale. They are about the same size but they are not the same weight. Which do you think will weigh more? Go ahead, let's weigh them and see if you're right.	The action sequence (on weight) and the one that follows (on rusting) are comparable to the one above on softness. (Again, the physical material plays a central role and there is extensive redundancy but at the same time, it contains major variation in wording.)	*metals*.") (These sorts of questions can be posed if all relevant materials are present. However, they require extensive preparation and may take so long as to interfere with the flow of the discussion.
Gold, according to the encyclopedia, is very heavy—even heavier than the rock you just weighed. What sentence tells us that feature of gold?	The actual sentence in the text (i.e., "*Gold is eight times heavier …*") is markedly different from the phrasing used in the discourse. The rephrasing is aimed at helping the students realize the variety of ways in which the concept may be expressed.	Most questions that can be answered by a direct recitation of the text (e.g., *"What did Marshall and Sutter do to the gold?, What did Sutter read in the encyclopedia?"*).
And then there is a final feature that is mentioned. It says that gold will not rust or tarnish. Over there, I have some examples of something that has rusted. Here are two pieces of iron. This one has been inside a house but this one has been left outside in the rain. What's the difference between the two?	Again, demonstration via physical material is provided, followed by a question that highlights the effects of conditions that have been put forth.	Questions about the reasons responsible for a substance being heavy or light.
That reddish stuff is rust. Now the encyclopedia says that gold will not rust. So if we left a piece of pure gold outside in the rain, what would happen? Would it rust like this piece of iron did, or would it stay its original color?	With the knowledge base established, students are asked to apply the information to deal with higher level processes such as prediction.	Questions or discussions on the causes of rusting (although potentially demonstrable, the time constraints prevent a meaningful demonstration).

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TABLE 6.1 (*continued*)

Instructional Discourse	*The "Why" of What Is Taught*	*The "What" That Is Excluded*
So let's summarize the features of gold that the encyclopedia pointed out to Sutter and Marshall.	Here the students are being asked to consolidate the specific, varied, critical features of gold that have been outlined. (Consolidation, or the preservation of meaning, across a host of sentences is a critical process in the mastery of literacy.)	Questions which demand unguided consolidation (e.g., "*What just took place between Marshall and Sutter?*" "*What was the main point in this section?*")
Now Sutter looked in the encyclopedia not just to find out about the features of gold. He wanted to determine if the piece of rock that Marshall brought to him was gold. Remember, before he looked in the encyclopedia, he said, "Let's test it." So how was he going to use the information about gold's features that he found in the encyclopedia?	Because the knowledge base has been established, students are asked to apply the information to deal with higher level processes such as reasoning and rationalization.	
That's exactly what they did. **Sutter and Marshall tested the rock. They pounded it. It flattened easily—just like gold. They weighed it. It was heavier than a whole handful of silver coins. They rubbed acid on to see if it would rust or tarnish. Nothing happened!** Let's go over this point by point. First, Sutter and Marshall's first test was to pound the rock. And what was the result? What was the next test they carried out? How well did gold meet that test? And what was the final test? And how well did gold meet that test?	The questions in this section are marked by an absence of embellishing comments (the "implicit" need not be made "explicit") because the preceding discussion established the necessary connections. Instead, the discourse here is structured to present a cluster of questions. The questions, which call for a near-direct recitation of the text, are appropriate because the goal is to coalesce key details. The questions, though, are still varied enough to prevent simple, thoughtless recitation. For example, the final question, "*And how well did the gold meet that test?*," is structured so that it cannot be answered appropriately by repeating the *Nothing happened* from the book. The absence of a response in that case is a significant, positive reaction and rewording is essential.	

Before the tests, Sutter thought the nugget might be gold. But now, since the nugget met all the tests for gold, What do you think he now thought?	This interchange is aimed at having the students (a) connect this part of the text to the original, critical point (on the difference between possibility [*might*] and actuality [*is*]), and (b) see the switch that has occurred in Sutter's judgment.
That's precisely the conclusion he reached. And that was precisely the conclusion that Marshall, the man who found the nugget, desperately wanted to hear. Do you remember what Marshall had been predicting about the minerals in the land? So what do you think Marshall's reaction was to his nugget passing all the tests.	In the next sentence, the written material is going to switch from the theme of testing to emotional reactions. This section is designed to have the students prepare for the switch by comments and questions that focus on (a) recalling information read prior to this segment, and (b) using that information to reinforce the intensity of his reaction.
That's right. It's not exactly in the same words, but it's the same idea. Here, read the next section. **Marshall got wild with excitement. He spun around the room. "Gold! Gold!"**	

This type of discourse moves more slowly than the discourse typical of school settings. That quality, however, is anything but a negative. The extensive comments (a) provide useful information and (b) block the fast pace of questions long recognized as a counterproductive force in classroom life.

Other questions of verbal length also arise. Although no examples are offered of the students' responses, it is nevertheless clear that the amount of teacher talk far exceeds the amount of student talk. In this respect, the proposed teaching does not differ markedly from current practice. This imbalance has regularly been found and generally condemned, with teachers being indicted for dominating the scene and causing boredom. The solution, from this perspective, is to have teachers reduce their speaking time while having students increase theirs.

From the vantage point of literacy, however, this suggestion seems off track. All books share a common characteristic. They represent an (absent) author "talking" at length to a silent reader who is expected to take in the lengthy exposition being put forth. In other words, the ability to attend to sustained verbal information from another person is key to literacy and not an undesirable attribute targeted for elimination. In structuring the discourse so that it mirrors this aspect of books, the chances for fostering for literacy are enhanced.

Needless to say, this is no justification for teachers imposing long, boring stretches of talk on students. Just as a book cannot afford to be boring, neither can a teacher. The key is not to reduce teacher talk, but to repackage it so that it evokes interest and facilitates comprehension.

Central to the repackaging is the type of text under consideration. In the lesson just offered, the text is from the curriculum area of science (see Halliday & Martin, 1993). Accordingly, the discussion is structured to help students see the type of analysis needed for this genre (e.g., critical components involve attention to specific details, sequencing, fine distinctions between concepts of certainty and probability, etc.). Texts from other areas require equally careful, but different patterns of analysis. Literature texts, for example, need to focus on issues on motivation and the role they play in human interaction, whereas social studies texts have to highlight key categories of group existence, such as economics, government, military, and art. Further, the discussions need not be confined to books. This type of analysis can be carried out on any material involving sequences of integrated, verbally based information, such as scientific experiments, newspaper articles, and films. (Illustrations of the varied discourse patterns for the range of school texts can be found in Blank et al., 1994, 1995.)

Finally, it is useful to return to the central issue raised at the start of the chapter where the study of classroom discourse was urged for its potential in enabling students to gain insight into the foreign language of written text. At the same time, it was accompanied by the caveat that *It may be*

the case that classroom discussion cannot, by itself, fill the gap that exists between students' skills and the unfamiliar demands of text. That caveat still holds. Extensive forays into classroom discourse have to be carried out before a clear determination can be made of its power to foster literacy. Still, I feel confident in closing on an optimistic note. In my experience, the approach offered here has proven itself to be an invaluable tool in helping students gain mastery of the world of print. At a minimum, hopefully it will serve as a catalyst for exploring dramatically different, more productive modes of discourse.

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For many in our population, literacy is a vital, but elusive, achievement. Restricted largely to the language of everyday life, students are ill-prepared for written text that imposes such demands as (a) grasping ideas conveyed in densely distributed, unfamiliar concepts, and (b) extracting coherence from seemingly disparate statements whose links are invisible. For these students, classroom discourse is the major resource for uncovering the complexities of literacy. However, in its current form, school talk is often not packaged in ways that will alleviate the students' problems. In the realm of concepts, its structure is more characteristic of testing than teaching; and in the realm of connected text, it provides little of the elaboration and redundancy required for coherence. Productive change requires a dramatic transformation of classroom discourse. This chapter provides the outlines of an alternative approach.

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