

Literacy in the Academic Disciplines and the Needs of Adolescent Struggling Readers

Carol D. Lee

“Disciplinary literacy” – the ability to understand, critique, and use knowledge from texts in content areas – is the primary conduit through which learning in the academic disciplines takes place. One way to develop this ability is to draw on the “cultural funds of knowledge” that youths already possess.

I wish to focus here on the demands on adolescents to develop the ability to understand, critique, and use knowledge from texts in a number of different academic content areas. I refer to these abilities as *disciplinary literacy* and I submit that they are the primary conduits through which learning in the academic disciplines takes place.

The work of the discipline of history, for example, consists of reconstructing acts of the past into a narrative that people from different perspectives can debate about. This work requires the careful and principled examination of a variety of primary source documents, the ability to both understand and critique the unexamined assumptions found in historical summaries such as those found in history textbooks, and the ability to communicate both orally and in writing one’s reconstruction of the past from such work (Wineburg 1991). Even in mathematics, not usually thought of as an arena in which reading and writing play key roles, research has described ways in which literacy serves important ends – such as allowing newspaper readers to understand the significance of statistics and numbers referred to in the news, rather than simply be dazzled by their presence (Paulos 1995; Borasi & Siegel 2000).

Despite the central role of literacy in learning all subjects, there is evidence that many high school students are struggling readers. Even students reading at grade level, on the whole, do not show proficiency in comprehending the complex texts they *should* be encountering in high school content area classes.

The Difficulty of Defining the Problem

Documenting and understanding the pervasive problem of high school students’ lack of reading skills is tricky. The best source for national data is the National Assessment of Educational Progress (NAEP). On the most rigorous reading tasks of NAEP, very few seventeen-year-olds score at a proficient level. In 1999, 8 percent of Whites, 2 percent of Latino/as, and 1 percent of Blacks scored at or above proficiency (Campbell, Hombro & Mazzeo 2000).

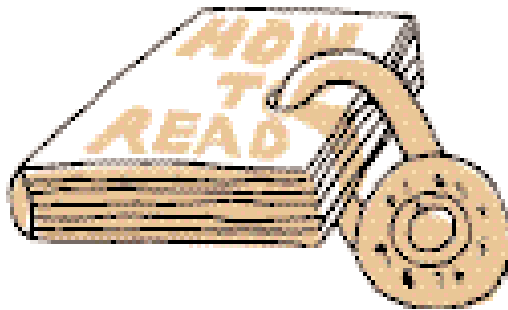
These findings have been critiqued, based on the claim that students have no vested interest in completing or doing well on NAEP exams, as there are no personal consequences for their levels of performance. Yet, there are no other standardized instruments used widely at the high school level that capture the demands of reading literary, historical, or scientific texts according to the dis-

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tinctive norms of each discipline.¹ This deficiency may be a testimony to the nation's fundamental lack of interest in or commitment to this level of literate competence among its citizens.

Although the literacy problem may be pervasive, we lack the ability to diagnose the problem effectively and deal with it. Too often, policy responses to low test scores are based on the assumption that the trouble is students' ability to decode or recognize words. But a study by Marsha Buly and Sheila Valencia (2003) suggests that these assumptions may be erroneous. The researchers followed up the reports of low achievement scores in reading on the fourth-grade Washington Assessment of Student Learning with diagnostic assessments of individual children. They found the source of students' problems in reading could be traced to six sets of factors, only a small portion of which reflect problems in decoding.

The challenge of understanding the needs of struggling readers at the high school level is even thornier because of the pervasive lack of knowledge about reading in most high schools, particularly those that have significant numbers of struggling students. High school content area teachers are trained in pedagogies associated directly with their disciplines. They often view a kind of generic reading competence (something they assume students acquire in elementary and middle school) as a prerequisite to including challenging



disciplinary texts (beyond the textbook) as part of their instruction.

Content area teachers also face confusing and sometimes conflicting demands for accountability. These demands may be viewed as pitting attention to concepts (e.g., in physics, how friction interacts with force) and declarative knowledge (e.g., in biology, the parts of the cell) in the disciplines against helping students learn how to read and/or to write.

As a result of these challenges and deficiencies, we have problems clearly defining what high school students should know and be able to do through reading in the disciplines. These issues are not well articulated in any of the national standards in reading, social

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¹ Not all experts within each discipline agree about norms for reading texts, and different professional contexts may place specialized demands on comprehension. However, I argue that each discipline has a widely recognized common set of discipline-specific strategies that novice readers need to master as preparation for future college and professional reading.

studies/history, or science. We have little knowledge about reading as a process in our high schools. And we have limited resources for diagnosing the needs of adolescent struggling readers or for documenting students' competencies in disciplinary literacy.

The Unique Characteristics of Adolescent Readers

Adolescents who enter high school as struggling readers differ from their younger counterparts in many ways. They are older and know more about the world than six- or seven-year-olds. They have a broader experience with the language of their homes and communities – which may be different from the standard academic English they encounter in school. These languages may be social or regional dialects (e.g., African American English, Appalachian English) or national languages (e.g., Spanish, Hmong).

The older students have been in school much longer and have been at least exposed to content knowledge in the disciplines. They have relatively long histories of participation (albeit not deeply engaged) in this place called school and, as a result, have learned subtle ways of negotiating both engagement and resistance. Findings by developmental psychologists (Spencer 1999; Spencer, Dupree & Hartmann 1997; Steele 1997) suggest that these adoles-

cents have internalized criteria by which they decide if a particular context or face-to-face interaction is threatening or poses risks to them and that they have developed patterned ways of responding to their perceptions of threat or risk.

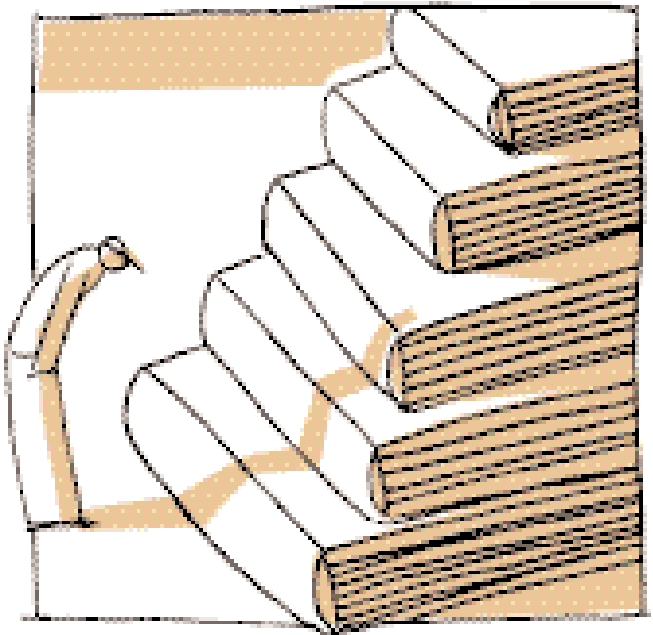
Adolescents are at an important developmental crossroads, sitting squarely (or, sometimes, not so squarely) between the worlds of late childhood and early adulthood. Linda Burton and her colleagues (Burton, Allison & Obeidallah 1995) have documented how some African American teenagers in the neighborhood they studied took on adult-like roles as parents, caregivers to siblings, and sources of needed economic support for their families; at the same time, in school they were often treated as though they were children. This kind of disconnect between the demands for participation in one life setting and another is always difficult to maneuver in, particularly for youths from stigmatized groups (e.g., youths who are Black or poor; South American, Asian, or African immigrants; or Black or Latino males).

Margaret Beale Spencer (1999) notes that in addition to grappling with a myriad of tasks both inside and outside of school, students who are members of stigmatized groups also face additional sources of threat or risk imposed by institutional structures,

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gatekeeping functions within these institutions, and limited resources (social networks, economic resources, health support, stable housing). A. Wade Boykin (1994) calls this the triple quandary (race, economic status, and gender) that too many of our youth face.

The challenges confronting adolescents add to the difficulty of acquiring school-based disciplinary literacy – particularly in schools with histories of low academic achievement, high turnover of teaching staff, significant proportions of teachers who are not credentialed in their fields, high student mobility, and a location in neighborhoods with high levels of crime and violence. These conditions make it harder for students to achieve, even when they want to – and many *do* want to achieve. Much survey data shows evidence that low-income African American students and their families regularly articulate very high expectations for success, even when achievement data undermine those expectations. I often say that in my many years of working in and around high schools, I have never met a student who explicitly says, “My goal in life is to fail courses. My greatest desire is to flunk out of high school.”



Cultural Modeling: A New Approach

The reading struggles of urban high school students, particularly low-income African American and Latino students and low-income immigrants, are real; but our typical responses to this challenge are weak. We have yet, in any systematic manner, to find ways to draw on the complex worldly experiences of these students to support rigorous disciplinary literacy.

To demonstrate what is possible, I will illustrate one approach that does explicitly structure ways to “scaffold”

students' linguistic and real world experiences in service of rigorous disciplinary literacy. The *cultural modeling* framework (Lee 1993, 1995a, 1995b, 2000, 2001) provides a structure for conceptualizing connections between what Luis Moll and Norma González (forthcoming) call *cultural funds of knowledge* and *disciplinary literacy*. The ability to build these connections depends on two crucial tasks.

First, teachers must use a deep understanding of the discipline to determine the most important kinds of problems to be tackled. In any discipline, the topics, concepts, and procedures that should be addressed are those that are *generative*: that is, those that facilitate a wide range of problem solving. One must understand how these topics,

concepts, and procedures relate to one another and what naïve understandings and misconceptions students may have about them. Based on this model, a teacher can make decisions about what – in students' experiences and ways of using language and in and across various settings – may provide important opportunities for connections.

It has been the absence of such an initial analysis of the demands of a domain that has lead researchers, teachers, and curriculum designers to dismiss particular cultural funds of knowledge as resources and to emphasize students' deficits in knowledge. For example, researchers in emergent literacy have often claimed that young students entering school whose parents have not read storybooks to them or who do not recognize the alphabet are ill prepared to learn to read. This claim is based on the idea that, for most students, learning to recognize the alphabet, to read from left to right, or to hold a book correctly are among the simplest of the tasks students face in learning to read. But this deficit position does not take into account the stories children hear, the rhetorical strategies they learn to get the floor in face-to-face conversations (Champion 2003; Heath 1983), the metalinguistic resources they develop in translating for their parents (Orellana 2001; Valdes 2003), etc. All of these resources – these cultural funds of knowledge – can be tapped.

The second task in cultural modeling is to investigate carefully the range of routine practices and ways of using language that students engage in outside of school. Sometimes this can be done through involvement with parents and neighborhood activities, as is the case with teachers in the Funds of Knowledge Project (Moll & González, forthcoming), often with Mexican immi-



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grant and Mexican American families. Particularly with adolescents, this can be accomplished by direct conversations with them, as partners in learning. The goal in such discussions is to understand the similarities in the kinds of problems tackled and in the modes of reasoning used between the academic disciplines and out-of-school experiences. These explorations can also identify experiences from students' lives outside school that either might provide useful analogies as students are exposed to disciplinary knowledge or that might be sources of confusion (i.e., misconceptions or naïve understandings).

In the cultural modeling approach, these two sources of knowledge – *disciplinary knowledge* of topics, concepts, modes of reasoning, or habits of mind, along with *cultural funds of knowledge* acquired by students through participation in routine cultural practices – come together over time through investigations of what we call *cultural data sets*. Cultural data sets pose problems of interpretation to the student that are analogous to a target problem in an academic discipline.

To date, most of the work in cultural modeling has involved the study of literature, although we are currently developing the approach in history and science. The target audience has been African American students, particularly those who speak African American English Vernacular.

Among the routine problems readers will face in tackling canonical works of literature are symbolism, irony, satire, and the use of unreliable narration. Speakers of African American English routinely produce and interpret each of these tropes, particularly as they participate in the language games of a genre of talk called *signifying*. Signifying is a form of ritual insult, a language game played across generations within the African American community (Mitchell-Kernan 1981; Smitherman 1977). The habits of mind that value language play as an aesthetically pleasing end in itself and the strategies required to understand and to produce literary tropes like symbolism are routinely employed by those who participate in these practices (Lee 1993, 1995a, 1995b, 2000). This knowledge,

however, is tacit. Youth who routinely listen to rap music are also interpreting similar tropes. Again, this knowledge is largely tacit.

In cultural modeling, everyday texts such as signifying dialogues or rap lyrics are used as cultural data sets. One goal of selecting and sequencing the analysis of such cultural data sets is to make public the strategies and habits of mind that students already use in other contexts. A second goal is to provide supports for students to make connections between how they reason in an out-of-school context and the demands of the academic work they will be doing.

Students move from analyzing cultural data sets to analyzing canonical works of literature. Canonical works are sequenced so that if the target of instruction is *understanding symbolism*, students will have repeated opportunities to apply their evolving understanding of how symbolism works in literature. In this way, what cultural modeling does is to make the academic game explicit for students. We have found that students with histories of low achievement in reading become intensely engaged in literary analysis (Lee 2003). They produce interpretations that are quite often profound. They learn to play the game of literary criticism in ways that capture the most rigorous norms of the discipline.

Instruction based on cultural modeling highlights the generative role of cultural funds of knowledge. I will illustrate with a unit on symbolism. For this unit, we selected rap lyrics, rap videos, and short films or film clips in which symbolism was central to understanding the text and with which students would be very familiar. One example is “The Mask” by the Fugees. In each stanza of this rap, a character is wearing

a mask. No student thinks the masks worn are literal. All listeners understand the masks represent something; in other words, the masks are symbolic. The discussion focuses on what sense students make of the symbolism, what evidence supports their claims, and what strategies students employ to construct their interpretations. In the transcript below, Janetta, a senior, offers an interpretation of one stanza. A majority of students in this class and in the school where this intervention took place had reading achievement scores well below grade level.²

From “The Mask” by the Fugees

I used to work at Burger King.

A king taking orders.

Punching my clock. Now I'm wanted
by the manager.

Soupin me up sayin “You're a nice
worker,

How would you like a quarter raise,
move up the register

Large in charge, but cha gotta be
my spy,

Come back and tell me who's baggin
my fries,

Getting high on company time.”

Hell no sirree, wrong M. C.

Why should I be a spy, when you
spying me,

And you see whatcha thought ya saw
but never seen.

Ya missed ya last move, Checkmate!
Crown me King.

² The transcript and data in this example are based on a three-year intervention at an under-achieving urban high school. A literature and composition curriculum based on the cultural modeling framework was instituted across the English Language Arts program schoolwide. As part of that project, I taught one class each year of the intervention along with the other members of the English department. The transcript data is from one of the classes I taught. Test-score data are taken from classes taught by other teachers in the department.

Janetta deconstructs the symbolism of the mask as follows:

JANETTA: Oh, I think . . .
[*Class is noisy*].

PROFESSOR LEE: Shh. Okay, quiet down.

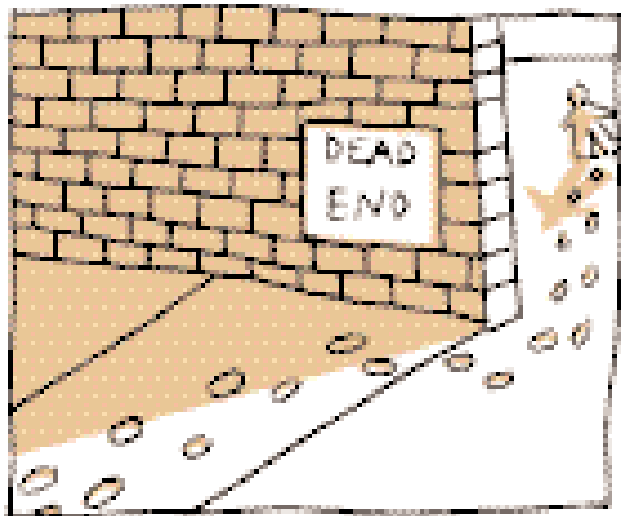
JANETTA: I'm saying, I think he had a mask on when he was fighting, when he beat him up, because in order for him to have the mask on, he was spyin' on that person. He was spying on somebody. I don't know who he was spying on. But in order for him to realize that the man was spying on him, he had to take off his mask. In order to realize that the man was saying . . . I don't know, shoot
[*laughter from class*].

PROFESSOR LEE: Let me try to break this out a little bit. Janetta, give me the words. You're saying . . .

JANETTA: I'm saying that the man, in order for him to realize that the other man was spying on him, that he had to take off his mask.

Janetta offers an interpretation that is highly literary in quality. She argues that both the Burger King worker and the manager are each wearing a mask; the worker, a "king," assumes a mask of civility, and the manager does not announce his intention to manipulate the worker. She recognizes that these are metaphorical masks, but also argues that they are dynamic and related to the relationship between the individuals. In order for the king wearing the mask of civility to recognize the masked intentions of the manager, the king must throw off his mask.

This is precisely the quality of interpretation that teachers hope students will make of symbolism in canonical literary works. Several important observations must be made. Janetta offers this interpretation without any preparation from the teacher. Because she recognizes that we are playing a game that



requires close attention to language, to responding to the aesthetic dimensions of how language is used, and because she has deep knowledge of the author (in this case, the rappers the Fugees), of the genre, and of the social codes that inform the internal states of characters, she is able to construct very literary responses relatively independently (her peers are offering similarly complex interpretations).

In addition, the students have greater prior knowledge of the text than the teachers, a typical situation in cultural modeling. Therefore, the culture of investigations in which students' voices are as authoritative as those of teachers becomes prominent right away.

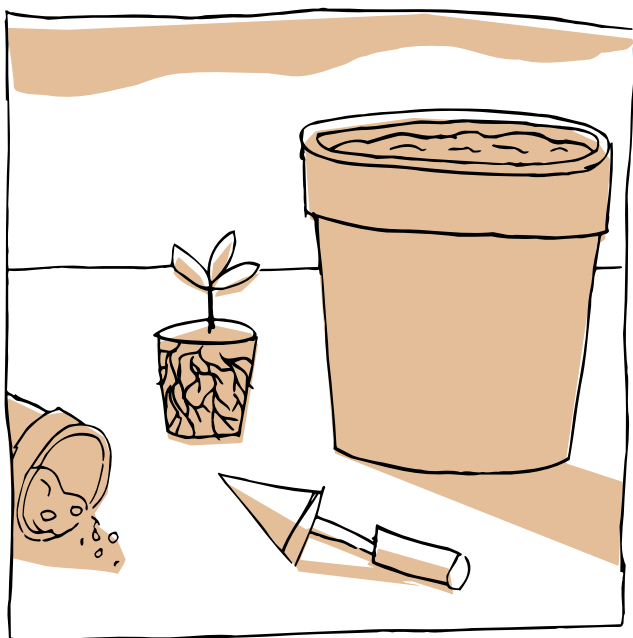
Our research project has examined a large body of transcripts and video tapes of modeling, both in my classrooms and those of other teachers in the department, and have documented that this quality of literary reasoning appears from the very beginning of instruction (Lee & Majors 2000).

After examinations of cultural data sets, students read a series of canonical works in which symbolism is central. Texts are sequenced so that students first read canonical literature to which they bring greater prior knowledge of the social codes that influence internal states of characters. With our population of African American students, this

meant African American literary works were read first, followed by texts from other traditions. The logic of the sequencing is that students begin to take forms of problem solving and habits of mind that had previously been tacit and make them public – first, through examination of cultural data sets and then through examination of culturally more familiar canonical texts. As they become more competent in the flexible deployment of strategies, they begin to attack texts for which they have less prior social knowledge.

The opening text was Toni Morrison’s award-winning novel *Beloved*, followed by short stories by William Faulkner, Amy Tan, and Sandra Cisneros; poems by Dylan Thomas, Emily Dickinson, and Dante; then Shakespeare’s *Macbeth*; and, finally, Ralph Ellison’s *Invisible Man*. This sequence gives students repeated experience in detecting and making sense of a generative interpretive problem, the mastery of which gives them access to a wide range of literatures and genres. Our assumption is that even though these students, on the whole, had low reading scores and would be perceived by others as struggling readers, they needed tools for unlocking the problems such texts posed. Thus, a major focus of instructional discussion was always on what students understood about the text and how they went about figuring that out. Mini-lessons on deconstructing syntax were also part of the instruction.

In the unit on *Beloved*, students developed complex interpretations of the many symbols we meet in the book: the tree, the turtle, the rooster, the dough, *Beloved* herself. It was not uncommon for students to articulate interpretations that the teachers had never conceived. This is the case in the



following exchange, in which Victor interprets the significance of the unknown young woman who mysteriously emerges from the water at the opening of the fifth chapter:

VICTOR: When she came out of the water, she sat in on the tree all day and night, resting her head on the trunk.

PROFESSOR LEE: Heeeeey Ahhhh. [*The class says that at the same time.*] Wow.

ANOTHER STUDENT: What did he say?

DAVID: He put something under the tree.

ANOTHER STUDENT: Beloved is a tree?

PROFESSOR LEE: Victor. [*Students are all talking at the same time.*] Hold up. Victor, please explain that. That's powerful.

[*Overlap*]

VICTOR: Let me find it exactly. [*Victor opens the book to locate his evidence.*]

PROFESSOR LEE: All right, Victor. Tell us the page.

VICTOR: Walk down to the water, lean against the mulberry tree, all day and night, [*reading directly from the novel*] "All day and all night she sat there, her head resting on the trunk in a position abandoned enough to crack the brim in her straw hat."

PROFESSOR LEE: She's not only resting on a tree but she seemed to be abandoned on this tree. Oooh, this is good. [*David raises his hand.*] Now, so, all right, David, a little bit louder so everybody can hear you. Charles Johnson, are you listening? David, a little louder.

DAVID: This book is connected to trees. Like tree is sweet home, tree on her back, tree in her back yard.

PROFESSOR LEE: Ahhh.

DAVID: Tree on this, tree on that.

It is evident that other students in the class value Victor's unique interpretation. I had read the novel twice at that point but had paid no attention to the fact that this woman was sitting on a tree. Victor cites textual evidence to

warrant his claim without prompting from the teacher. David goes on to make links among other images of the tree across the novel – again, unsolicited by the teacher.

The tree is a complex symbol in the novel, linking Sethe, Beloved, and Paul D. with the tragedies and ironies of African enslavement. Victor's association of the woman coming out of the water with the pervasive image of the tree is one of the subtle hints that the woman is the baby that Sethe had killed; the students in the class had recognized early on that this young woman was the baby Beloved, returned.

The students paid close attention to details in the text. They looked for patterns across details. They recognized signals to reject literal interpretations. The game they played quite seriously was literary in nature, situated squarely in norms for reasoning in the discipline.

In addition to analyses of transcripts across classrooms and time, we developed assessments of comprehension at the end of each unit of instruction. Students were given short stories that posed problems comparable to those they had met in the instructional

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unit, but which they had not read in class before. This was our attempt to capture the quality of transfer. Could students interpret problems of literal and figurative interpretations of complex stories they had not been taught in class?

Figure 1 below represents results from senior class students after the unit on symbolism. The story they had read was a very complicated story by the nineteenth-century Italian writer Giovanni Verga called “She-Wolf.” Using a question taxonomy developed by Hillocks (1980), we tested students for key details (LIT-KD), simple implied relationships (SIR), and complex implied relationships (CIR). Differences are shown by teacher. These results were typical across grades.

I use the example of cultural modeling to illustrate how it is possible to address generic needs of high school struggling readers and, at the same time, engage them in rigorous problems in the disciplines. Until we approach literacy problems in our high schools by emphasizing strategies for mastering complex disciplinary reading instead of generic reading abilities, most students will continue to fall behind their more affluent peers.

Robert Moses, founder of the Algebra Project, argues that mathematical literacy is the civil right of the twenty-first century (Moses & Cobb 2001). I would extend Dr. Moses’s call to say that disciplinary literacy is the civil right of the twenty-first century. Disciplinary literacy provides access to learning in all subject matters and, by so doing, opens up an array of life opportunities for young people.

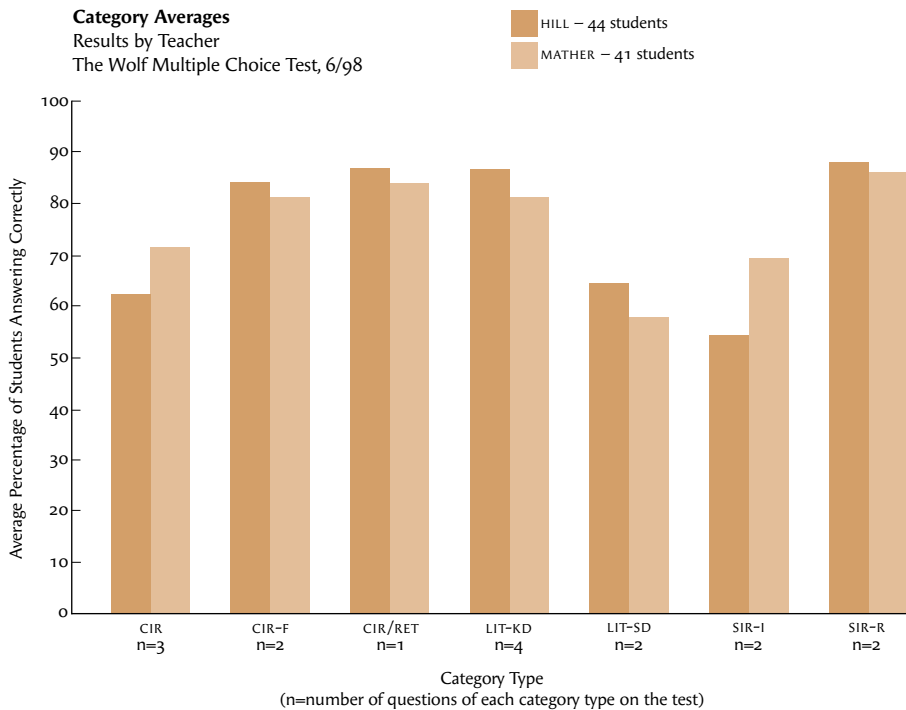


Figure 1. Senior test scores at end of unit on symbolism

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