Despite efforts by educators and policymakers across the last several decades, achievement gaps between groups of students stubbornly persist. Since the 1970s, the National Assessment of Educational Progress (NAEP) has periodically surveyed student achievement across the country at ages 9, 13, and 17. From 1973-1999, reading performance for 13-year-olds showed a persistent, although slightly narrowing, gap between White and Black students. From 1982-1999, the gap between Hispanic and White students narrowed, then widened again.

In 2001, the reauthorization of the Elementary and Secondary Education Act — better known as the No Child Left Behind Act — increased focus on this gap by holding individual states, districts, and schools accountable for eliminating the achievement gap by the year 2014. The legislation requires that states and districts not only assess all students annually from grades 3-8, but also that they disaggregate the results to show adequate yearly progress for their total student population as well as for different demographic groups.

**Sources of inequality**
The potential sources of achievement inequality are many and may include 1) different levels of resources within the family and community outside school, 2) unequal access to quality schools, and/or 3) uneven access to resources within school (e.g., qualified teachers). CELA researchers have examined the effects of all of these potential sources of inequality on literacy achievement. For example, Deborah Brandt’s award-winning work has looked at the relationship between social change, reading, and writing, and the sponsorship of literacy, in the twentieth century. In two other studies, Adam Gamoran and colleagues sought to determine the extent to which differences within and between schools contribute to the literacy achievement gap. They found that differences within schools (tracking) accounted for more of the achievement gap than differences between schools. In a new research brief, see Tracking and literacy on page 2.
Tracking and literacy from page 1

being prepared by Gamoran, he discusses the results of both studies and concludes that tracking appears to not only perpetuate but exacerbate the gap. After controlling for race, ethnicity, and socioeconomic status (SES), he reports that tracking has a sizable effect as “the organizing device that perpetuates inequality.” In addition, “unequal instruction accounts for part of tracking’s effects on achievement.”

The studies

Gamoran examined two data sets: 1) a National Educational Longitudinal Survey (NELS) that tracked reading achievement for a representative sample of students from 1988-1992, beginning when the students were in eighth grade, and 2) a CELA study of more than 7264 middle and high school English classes in 5 states during the 1999-2000 academic year.

NELS. NELS tested reading comprehension (through multiple-choice assessments in 1988, ’90, and ’92) and provided teacher-reported information on track levels (honors, academic, regular, vocational, remedial, general) and classroom instruction (e.g., amount of discussion, emphasis on literature, grammar, vocabulary, writing), as well as student-reported information on how often they read novels, wrote essays, felt challenged, wrote expressively or for understanding, and completed their English homework. Family background information came from student and parent questionnaires. School data (e.g., % of free and reduced lunch, racial composition) came from public records. The NELS sample began with about 25,000 students, from which Gamoran drew 6000 for his analysis. Thus the NELS provides data for many students over an extended period of time, but it does not connect students to their particular classes nor offer evidence of instructional differences (within classrooms) connected to their classes. Across the five states (CA, FL, NY, TX, WI), more than 1,000 students took part. Each state involved four schools, two each middle and high school, urban and suburban. Approximately four classes in each school participated, with sixty-four classes providing enough data for analysis. Although looking at a smaller sample over a shorter time than NELS, the CELA study offered richer data on classroom instruction and connected students to their classes.

Together the studies provide a representative national sample while helping us understand the classroom experiences of individual students.

Findings re: tracking

When Gamoran controlled for student differences in race, ethnicity, and SES, the data from both studies revealed no association between the racial, ethnic, and SES composition of schools and student performance. Given the generally close correlation between student track assignments and SES, he was careful to consider both student prior achievement and SES in conducting his analyses. But track levels still account for more than 1/3 of the SES inequalities in each study, while contributing little or nothing to racial/ethnic inequalities. Both data sets show higher achievement growth over time for students from economically advantaged families. From his extensive analyses of these data, Gamoran concludes that although “not all of the unequal literacy levels that we observe can be attributed to schooling, differences in track assignments and instruction contribute significantly to the literacy achievement gap in middle and high schools.”

Differences in instruction

In the NELS data, instructional differences between the higher (honors and academic) and lower (general, information about classroom discussion on surveys. Classroom observations provided evidence of the extent and nature of such discussion. Students completed a questionnaire about how often they completed their reading and writing assignments and provided family background information. Across the five states (CA, FL, NY, TX, WI), more than 1,000 students took part. Each state involved four schools, two each middle and high school, urban and suburban. Approximately four classes in each school participated, with sixty-four classes providing enough data for analysis. Although looking at a smaller sample over a shorter time than NELS, the CELA study offered richer data on classroom instruction and connected students to their classes.

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remedial, and vocational) tracks account for 10-20% of the greater achievement gains of the higher track students. The student and teacher reports of NELS reveal differing amounts of emphasis on understanding, analytical writing, and grammar in the different tracks, with the higher tracks emphasizing understanding and analytic writing and the lower tracks emphasizing grammar. On the NELS reading tests, instruction characterized by more emphasis on understanding and analytical writing is associated with higher gains; instruction that emphasizes grammar is associated with reduced achievement. Thus instruction in the higher tracks privileges greater achievement gains.

In the CELA study, differences in instruction account for 25% of the SES inequalities beyond the effects of tracking (37%). The gap between higher and lower track students widened over the school year.

**Implications**

As related in the sidebar on page one, overall a key finding of the CELA study is that literacy gains are greater in classrooms where students engage in dialogue with their teacher and each other as they build deeper and broader understandings. These conversations are critical to student learning, but it is also critical that conversations be about important topics and challenging subject matter. The three elements of quality instruction are tightly interrelated. Both high quality instruction and high academic demands are significantly related to gains in achievement.

The CELA study also reveals that the lower track classes get significantly less of all the elements — fewer dialogic discussions; less emphasis on envisionment-building activities; fewer connections between reading, writing, and discussion; less homework assigned and completed; lower teacher expectations. In an earlier study, Gamoran and colleagues found that the content of teacher and student questions that generate genuine discussion are different in the different tracks: In higher tracks, questions focus more on the literature the class is reading; in lower tracks, questions that generate discussion are frequently about matters not closely related to the curriculum.4

**Conclusions**

Because track assignments are usually determined by students’ prior achievement, and since prior achievement is usually associated with SES, students of high SES are usually over-represented in the higher tracks, and students of lower SES in the lower tracks. And since instruction differs between the tracks in ways that privilege the higher track students, the overall effect is to widen the achievement gap between high and low performing students over time. Acknowledging that non-school factors account for some of the differences, “nevertheless the effects of tracking and the resultant difference in instruction are significant enough,” Gamoran says, “that by improving the quality of instruction in all classes, we can take a step towards reducing the inequality in the literacy of American youth.”

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2 Brandt’s work was one of a set of CELA studies of cultural and historical contexts for literacy [http:// cela.albany.edu/research2/thread22c.htm]. Her book Literacy in American Lives examines the sponsorship of literacy outside formal schooling. The book has just received two prestigious national honors (see page 7).


throughout my professional career, my work has focused on how the literate mind develops — how people become rich thinkers and language users, good discusssants and learners, and how they become able to manage well in life and society. The kind of literate mind I care about involves the kind of thinking needed not only to do well in school, but outside of school — in work and life. It is the kind of mind people need to do their jobs well, to adjust as their jobs change, and to be able change jobs when they need or want to. Today, not enough adults have this kind of literacy, nor are students learning it well enough. And, too often the students and their families, rather than the system, are blamed.

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This is a very different of literacy as the acquire and writing skills and values as being smart as well as how to teach a very different.
literacy matter?

particularly influenced by new technologies, are people do. As businesses and industries remake, adults, often in their prime productive years and new skills and knowledge. It has been projected that literacy benefits can be realized in the long term. Literacy, where reading and writing are dominant skills, becomes more essential. Some educators are concerned that fewer people are reading and writing well, as new ideas, information or experiences come to mind — even after a specific course of action is taken. They argue that literacy learning is an essentially social enterprise, where the uses of literacy grow from the social environments in which they are seen. And the mind learns to work, to think and reason, in ways that are particular to those purposes and situations. We learn not only the uses of literacy but also what is valued, what is considered successful.

Sociocognitive view

Although we all think we know what literacy is, it's a slippery term. It has no meaning in any but a specific sense, in a social and situational sense, at a given place and time. So, I will tell you that any statistics you read about literacy are likely to be misleading. Literacy needs to be understood in terms of time and place and people, communication systems, and technologies and values — and these are always changing.

By a sociocognitive view of literacy, I mean that literacy learning is an essentially social enterprise, where the uses of literacy grow from the social environments in which they are seen. And the mind learns to work, to think and reason, in ways that are particular to those purposes and situations. We learn not only the uses of literacy but also what is valued, what is considered successful.

The social context and uses affect not only the kinds of literacy we use, but the kinds of knowledge we are after and also the strategies we use to get there. Within social settings, people learn to manipulate the tools of language (pen, books, computers) in ways they see them used; they learn strategies and ways of thinking to gain certain kinds of knowledge and not others.

This view has great implications for understanding the kinds of literate knowledge students come to school with and for also understanding the range of experiences they need to have at school in order to gain a broader range of literate abilities. It means that if we want students to become more highly literate, the social context of education — what is valued, how people interact about it, and how things get done — all need to change.
Three decades ago, a team of British educators championed the idea that writing could enhance academic learning. The process of writing, they argued, closely resembles processes of speaking, thinking, and learning. Writing also leaves a “residue,” a document that can serve as a tool for reflection, discussion, and revision. Writing might facilitate learning if its processes and products were thoughtful, expressive, and integrated in classroom discourse.

Over the last twenty years, researchers have tested the efficacy of writing-to-learn in numerous studies, but the results of these studies have been ambiguous. Though many showed improved academic achievement from writing, others reported detrimental effects.

Our meta-analysis* of school-based writing-to-learn programs shows that writing can have a positive impact on achievement. There are several reasons why the effects of writing on learning may vary. The frequency, nature, and social context of the writing tasks might influence writing’s effects. Writing also takes time from other learning activities that are more or less productive. Students with low confidence, interest, or skill in writing might find additional writing tasks distracting and burdensome. And writing tasks might be well or poorly aligned with classroom assessments.

Using statistical procedures to analyze the previous research on writing-to-learn, we sought to identify conditions that might best enhance the learning effects of writing. We identified 45 studies that compared normal classroom instruction to writing-intensive instruction on the same content. These studies had been conducted in elementary grades through college and in all sorts of subjects. We coded each study on fifteen variables representing its publication history, the quality of its research design, the context of the learning activities, the intensity of the writing treatment, and the types of writing tasks required of students. We translated the study outcomes into a common metric — the effect size (the standardized difference between the mean achievement scores of writing-to-learn and conventionally taught students). We looked for relations between study features and study outcomes measured as effect sizes.

**Findings**
In three-fourths of the studies, writers outperformed conventional students, but the typical improvement was a small one. In twenty-four of the studies, students completed writing assignments in class, so researchers could record the time spent on the writing tasks. What appears to matter more than the amount of time given to an assignment is the nature of the writing task, the kind of thinking that gets done. One factor reliably enhanced the effect of writing-to-learn: When writing prompts urged students to reflect on their learning processes — the challenges they faced and the strategies they employed — the educative effects of writing were substantially improved.

In general, these studies and other research suggest that writing can benefit learning, not so much because it allows personal expression about subject matter as because it scaffolds metacognitive reflection on learning processes. And the cost need not be great: even relatively brief tasks can boost learning. Additional research and classroom investigation should further clarify how writing benefits learning.

*For more information about this study, contact Robert Bangert-Drowns at rbangert@albany.edu.*

*”A meta-analysis is a systematic review of previous studies on a topic. It involves four phases: identification of studies to include in the review, coding of study features, calculation of effect sizes, and statistical analysis of effect sizes to examine the relations between study features and study effects.”*
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___ Please send the following reports: ______________________________________, _____ copy/copies of the Guidelines booklet, and _____ copy/copies of Improving Literary Understanding booklet. I’ve enclosed a check payable to the Research Foundation of SUNY. Prices include postage and handling. Total: $______________

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envisionment-building process underlie all the research I do. And one newer body of research has begun to be absorbed into my larger theoretical conceptions of literacy.

**Literary understanding**

Literature is the most underestimated subject of study in schools. It plays a critical role in our lives by helping us reflect on ourselves and the world, but coming to understand it also involves the mind in making sense — it involves a set of cognitive strategies that are useful for the sharp and fully literate mind.

My studies show that logical and literary thinking are quite different. The content is different, but so are the strategies we use to make sense of each. In logical thinking, we ask questions and refine our understandings in order to narrow in on and build a fuller understanding of ideas or thoughts or knowledge we are after; and in literary thinking, we ask questions and seek meanings that go beyond what we can imagine. This act changes not only our understanding at the moment but also our ideas about where our understandings might go — how the piece or situation might end. It involves exploring horizons of possibilities.

This distinction makes a major contribution to our notion of literacy. We have clear ways of thinking and talking about scientific, mathematical, or logical reasoning but none to talk about literary reasoning. Yet literary reasoning is used all the time. For example, research shows that when doctors make diagnoses, if their logical thinking doesn’t get them to a solution, they create scenarios and tell stories. From my perspective, they engage in literary thinking.

We use and value both ways of thinking in our everyday lives and at work all the time. So do students. But at school, we primarily teach and value logical thinking. This rules out a lot of good thinking and problem-solving that could be learned. This concept of literary understanding is a useful aspect of high literacy for all of us, including students.

I hope you can see that I’ve tried to use my research as a way to change our basic understandings about the literate mind and how to teach literacy — to offer new vantage points from which to understand what people know, how and why they learn as they do, and how to help them become more literate.

I’ve tried to offer some new concepts that can make real changes in how schools conceive of and organize for learning and how students and teachers can work together to make it happen.

Above all, I hope these changes can help nurture the kinds of students who have, what I call literate minds. Of course I want them to pass the high stakes tests (this is important to them in our society, at this time), but I want so much more than that. I also want them to have choices — to be able to gain knowledge and learn new skills throughout their lives, to explore possibilities and ponder options as they shape and reshape their own lives and the world around them.

For the entire speech, including Langer’s description of her current research in schools, visit our website: [http://cela.albany.edu/researcher/langer/dist_speech.pdf](http://cela.albany.edu/researcher/langer/dist_speech.pdf)