

Research at the Center

Teaching: A Source of Celebration by Ronald Sass, Co-Director

Asking why do I teach is akin to asking why do I eat or sleep. To me, teaching and related activities are reasons for being and a cause for celebration. Recently my twenty-two year old granddaughter moved into our home for a couple of months while she searched for a new apartment. She was enrolled in a local college at the time and was experiencing some difficulty with a calculus course. As I was helping her study one evening, she put her pencil down and stared at me, saying, "How can you enjoy this stuff so much? You're even getting me to believe that I can do it!" And she actually found that she could.



Ronald Sass, Ph.D. believes that effective teaching starts with internalizing the subject.

"To hear that one has had some small part in making someone else realize success in life is compensation beyond anything else I can imagine."

The University requires that all of its faculty teach, do research, and participate in service activities. These activities are mutually supportive and, when combined effectively, become one's very identity. I engage in research because of the challenge it presents and the hope it holds for the understanding of how things may work. I teach because I enjoy it and because it connects me with others; whether they be undergraduates, graduate students, scientific peers, or teachers and children in K-12 schools. I also believe that I have a gift for teaching and have been afforded the opportunity to use that gift to facilitate learning for others. At Rice I have taught

continued on page 9

Making Knowledge Accessible by Linda McNeil, Co-Director



Linda McNeil, Ph.D.
Co-Director Center for Education

How do schools make knowledge accessible – and inaccessible – to students? What parts of our cultural heritage come to count as "school knowledge"? What gets left out? What are the factors shaping what is taught in schools?

These are the questions that define my research. All of my studies of classrooms, all the papers I have written, my books, and the programs we have created in the Center for Education represent my continuing curiosity about what is taught in schools – and to whom and why.

We were asked for this issue of *CenterPiece* to write about our research – what we study, what we have learned from our scholarship, what issues and questions keep pushing us to learn more about children and schools. It was reading Ms. Goodman's piece in this issue which brought into vivid clarity the events that set me on this course of looking at knowledge access – and knowledge control – in schools.

Ms. Goodman writes about a teacher who remembers what it was like to teach in the days when teachers developed curricula -- out of their knowledge of their subjects and their understanding of their students – not scripted by standardized test drills or numbered lists of state objectives. Those *were* the days.

I began my career as a teacher with just such a spirit – determined to introduce my students to great literature, to make them fluent and articulate writers, to engage them in the discussion of enduring questions and complex ideas. We young teachers

continued on page 8



INSIDE

Science	
<i>Student Achievement</i>	p. 2
<i>Houston's Watershed</i>	p. 3
<i>Action Research</i>	p. 3
Literacy	
<i>Storytelling Project</i>	p. 4
<i>Paradise Lost</i>	p. 5
Culture	
<i>What's in this for me?</i>	p. 6
<i>Dr. Valenzuela</i>	p. 7
<i>Ways of Worldmaking</i>	p. 7
Whole School Change	
<i>Coalition of Essential Schools</i>	p. 10

Student Achievement through Science

by Wallace Dominey, Project Director, School Science Project

The Center's School Science Project and Aldine Independent School District formed the joint Rice/Aldine ISD science collaborative in 1998 to provide teacher professional development for Aldine's science related magnet schools. Key components of the initiative are science summer institutes for teachers and academic year support provided by full time, non-teaching science specialists hired to the staffs of each of the participating schools. The goal of the collaborative is to impact student achievement in science, to produce exemplary science programs, and to use science as the catalyst for improving teaching and learning in all subject areas (see Centerpiece, 1998, Volume 5, Number 1).

Over the past two years, the initiative has impacted 82 elementary, middle, and high school teachers in summer science institutes. Additionally, because of the school-wide implementation of the professional development program, some 300 teachers and more than 6000 students are impacted annually.

One of the important goals of the Rice/Aldine ISD science collaborative is to document changes in students and teachers attributable to the collaborative. As a result of the collaborative are teachers improving their knowledge of science content? Are teachers changing their teaching practices to include more inquiry based, hands-on science? Does professional development for teachers translate into increased student achievement in science?

To answer these questions, students and teachers were asked to complete assessment instruments measuring their science content knowledge and (for students) their ability to understand and conduct science. Standardized tests, including questions from the Third International Math and Science Study, were used. In addition, an alternative (hands on) science assessment was developed and given to students. To control for other variables, non-participant teachers teaching the same student populations in the same schools were also tested as well as students of both participant and non-participant teachers.

The results were very exciting. Not only did teachers increase their science content knowledge as a result of the 1998 summer institutes, but more importantly, students of participating teachers showed increased science achievement during the following 1998-99 academic year. The paper shows the increased achievement of "participant" students (students having teachers who participated in the 1998 summer institutes) against "non-participant" students (control students having teachers who did not participate in the 1998 summer institutes). The achievement differential averaged 9%, with "participant" students averaging an 11% increase in test scores while control "non-participant" students averaged a gain of only 2%. These results are highly statistically significant, and similar statistically results occurred whether standardized tests or alternative assessment measures were used. To have successfully linked teacher professional development directly to student achievement is particularly impressive for the first year of the collaborative.

Additional evidence that the program has successfully impacted student achievement is provided by 8th grade science Texas Assessment of Academic Skills (TAAS) scores from the one participating middle school. This middle school improved from next to the last in the district (1997-98) to first in the district (1998-99) following the implementation of the initiative.

The next goals for the Rice/Aldine science initiative are to achieve success in local and national science and engineering competitions; to strengthen connections with Rice faculty, staff, and students; and to strengthen the connections with the local science and engineering business communities. When these steps are taken, the joint Rice/Aldine ISD science initiative will truly be a model university-school district partnership in support of systemic change in public school science education, change that benefits every child.



John Moore, Drew Academy, Aldine ISD, helps 7th grade students calculate flow rates.



Teachers and Students Study Houston's Watershed

by Linda Knight, Associate Director, Model Science Lab

In September, the Arthur Vining Davis Foundation awarded a major grant to the Model Science Lab to establish a network of high school teachers and students across the greater Houston watershed. With Dr. Nonie Harcombe as the principal investigator, this project will link student research groups as they investigate environmental issues in the region with a focus on building quality science studies. The research effort will be supported with teacher training, curriculum materials, and a science advisory board. Research findings will be posted through the Bayou City WATER website.

Initially, three major research strands will be pursued: wetlands, water quality, and urban environmental corridors. In the wetlands studies, students will conduct investigations of several wetland sites. On the west side of the city, three different school groups will utilize the Attacks I Baker Reservoir as outdoor laboratories. Other groups in various areas of Houston will identify and investigate wetlands near their schools. The first focus will be to inventory the plants in the designated wetlands. Following this effort, students, along with scientists, will establish a variety of analyses to monitor changes in the wetlands and to provide data that can be used to compare the various wetland study sites.

In the water quality investigation, students will work in teams to monitor selected sections of the waterways in the greater

Houston area. This long-term project is designed to provide data sets for students to analyze changes and to examine the urban impact on water systems over time. Research protocols for these studies will be developed by students and teachers with the advice and assistance of a science advisory board.

The third major strand of the Bayou City WATER project will study the fragile remnants of native habitats found woven among the urban concrete and glass. Students will map these urban corridors and identify the native and invasive vegetation. They will determine major wildlife habitats and analyze the security of the habitats from urban invasion. School grounds and home wildscape construction will be encouraged through a variety of ventures including school horticulture programs to grow and then distribute native vegetation. Students will also investigate changes in both local and migratory populations.

In its initial planning phase, protocols and study sites are still being determined for the Bayou City WATER project, and lead teachers and key community support groups for each research strand are also being selected. The first major effort to engage the interest of school groups was at the Houston Environmental Youth Conference in January.



Action Research Improves Teaching

by Nedaro Bellamy, Associate Director, Model Science Lab

In the Model Science Lab at Lanier Middle School, resident teachers employ action research to explore beliefs and assumptions about instructional strategies, pedagogy, and student interactions within their classroom. The action plans stimulate questions such as, "Do I promote an inquiry-based classroom? Do I provide enough time for students to respond to my questions? Am I asking questions to promote student learning and understanding? How equitable is my classroom?" The answers to these questions are investigated through research-based theories and strategies during the teachers' residency year in the Model Science Lab.

Resident teachers in the Model Science Lab recognize the challenges of educating students in the 21st century and the importance of strengthening instructional strategies to effectively meet student needs. Traditionally, teachers have always been researchers, searching for innovative instructional strategies and techniques to motivate and promote student learning opportunities. Using the constructivist approach of action research, resident teachers investigate the effect of instructional techniques and pedagogy on student learning and use the results to reform their own teaching strategies and practices in the classroom. Their goal is to assure that children are understanding science.

From an action research perspective, resident teachers analyze interactions in the classroom such as teacher-talk vs. student-talk, questioning strategies, wait-time, teacher movement patterns within the classroom, various learning styles of students, gender and ethnic preferences, as well as different alternative assessment strategies and ways to encourage students with special needs. Videotaping and observation by peers helps teachers examine their instructional strategies and their students' level of understanding of science concepts.

Resident teachers then use the data they collected to write a paper that analyzes their action research data. Teachers have written on teacher-talk vs. student-talk, teacher wait-time for student responses, teacher movement patterns in the classroom, and teacher-student interactions by gender and race. This format stimulates teachers to explore and reflect on effective and ineffective teaching practices that occur in their classrooms. The goal of this assignment is to improve instructional practices by teachers in order to promote scientific literacy of students into the 21st century.

Storytelling Approach to Literacy

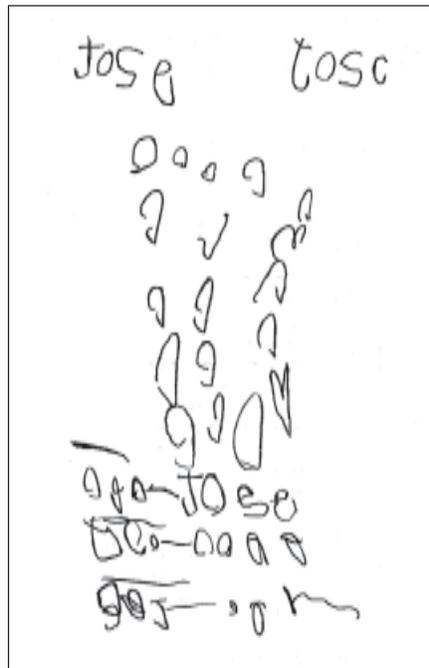
by Margaret Immel, Literacy Coordinator, School Literacy and Cultural Project

"I love writing stories...I become a better writer when I write long stories." Ariel, a five-year-old, spoke these insightful words after having dictated and read her longest story to her teacher. The School Literacy and Cultural Project (SLC) has evolved over the past decade to meet the needs of schools and teachers in their constant quest toward developing children who are not only equipped with the necessary skills for reading and writing but who, like Ariel, are on their way to becoming truly literate beings—those who enjoy and choose to read and write.

In the spring semester of the 1998-99 school year, the SLC began "tailored-made" professional development for two magnet primary schools in the Aldine ISD. Reece Academy, with principal Stephanie Rhodes, serves students in preschool through kindergarten and Anderson Academy, with principal Candee Wilson, serves students in first through third grades. The two schools selected the SLC to help them meet their goals as Houston Annenberg Challenge (HAC) Lamplighter Schools to facilitate the literacy development of their students and to impact the literacy awareness of the families they serve. SLC has committed to work with the schools for the duration of the HAC grant. Both schools are Direct Instruction/Montessori/Fine Arts magnet schools. Because stories and dramatization are universal literacy events, the SLC's Classroom Storytelling Project's dictation and dramatization activities have meshed easily into both the Direct Instruction and Montessori settings.

The experience is unique for both the SLC and the schools because there is such a significant number of teachers who participate at the same time. During the first session twelve teachers were involved, six from each school with equal representation from both Direct Instruction and Montessori teachers. This year there are ten teachers, five from each school. Enhanced collegiality among the teachers has been one benefit of having so many involved. More interactions between the teachers of the two methods have occurred. Teachers share their own and their students' enthusiasm for literacy events—dramatizations, dictated stories, and stories that the children write on their own. Teachers from the first group actively recruited, encouraged and supported the teachers who are currently participating. As one Direct Instruction pre-kindergarten teacher said, "I want my students from last year to be able to continue this year because they loved it and learned so much."

The children do love it, and they do learn through the dramatizations as well as the story dictations. Ariel not only wrote long dictated stories, but she also began writing long stories on her own. "She takes her notebook and pencil everywhere!" her mother said. "I'm really excited to see and hear her sounding out the words as she writes." Ariel was not alone. When the teachers at Reece met the children's requests for dramatizing their own handwritten stories as well as the dictated ones, there were story explosions in the classrooms. The children, regardless of age or ability, wrote, crafting not just spelling but even symbol systems for writing as evidenced by Jose's story (pictured). Jose, who was just three at the time, wrote stories daily as did many others when it was not their turns to dictate their stories to their teachers. They brought in stories they had written at home. Teachers at Anderson also noticed increased independent writing among their students; they also saw that they wrote more interesting pieces and improved their writing skills. As students dictate and write their own stories and dramatize them, teachers are given unique views into the thoughts of the children—what they enjoy, fear, care about, are trying to understand, and more. When teachers know their students better, they can do a better job of teaching them.



3 year-old Jose's Story

where they are at the end of this year." Neither can we.

*"I love writing stories...
I become a better writer when I
write long stories."*



A Paradise Lost: Opportunity to Listen Links Teachers

by Gastonia (Terri) Goodman, Associate Director, School Writing Project

On this Thursday night, it was Illene's turn to read. The conference table in the Student Center at Rice University was littered with cheese, crackers, and soft drinks. It was our third meeting as a group and the late afternoon workshop had started off unevenly. Three of the eight participants had arrived late due to commitments on their campus. This isn't too unusual, since it seems that many of the teachers drawn to the collaborative reading and writing work of the School Writing Project are also the most engaged and overextended on their campuses.

"I've only known how bad it is out here for teachers. I've only known what my life is like in the classroom. Your piece has given me some hope that it doesn't have to be this way."

The writing that Illene brought to the group was a personal narrative about her 38 years in the classroom. It was a first draft and covered a lot of territory. The agenda items still left to be covered for the night were mentally crossed off my list. The opportunity to listen to each other's writing is at the heart of the School Writing Project experience and provides an important link for connecting the group.

But as Illene began to read and recreate her classroom experiences of the 1960's and 70's, I found myself caught up in her stories. I was not alone. The shuffling of papers and crunching of food stopped as each participant listened. It was a teaching world unfamiliar to those of us who have entered the profession in the last ten years. It was a world where Illene was not mandated by TAAS to a set curriculum, but had the freedom to create relevant thematic units like one on "Death and Dying," bridging literature with her students' outside experiences. It was a world where teachers were friends and formed communities around post-football game parties, and shared the writing of a school song. It was a world based on trust and respect. She trusted her colleagues, she was respected by her students. It was a world where the profession of teaching was a choice, not a day-by-day decision.

When Illene finished reading, there was a silence in the room. It wasn't the usual silence that accompanies the thinking about a response to a piece of writing. It was a deep, sad, reflective silence. The teaching world that she described seemed so far away. As we started to offer our comments, it seemed that the language of revision was inadequate to the experience. Something important had happened. A second year teacher in our group captured the event for all of us with her words. "I've only known how bad it is out here for teachers.

I've only known what my life is like in the classroom. Your piece has given me some hope that it doesn't have to be this way," she said.

It did seem at that moment that all of us had been privy to a paradise lost. It made me think about the obstacles that prevent teachers from telling their stories. An earlier experience on the same day that Illene read her story stood out as a dramatic illustration to the challenges that teachers face in collaborating and finding meaning in our practice. I was stopped in the hall by a member of our newly formed action research group. We teach at different grade levels a language arts program based on the work that has developed from the School Writing Project. One of our goals this year was to meet regularly and examine our work in the classroom. So far, we had met five times - every two weeks during lunch. Our meetings in this fifty-minute time frame had often been fragmented. As Marilyn Cochran-Smith and Susan L. Lytle point out in *Inside Outside, Teacher Research and Knowledge*, "Time is also one of the most critical factors in the formation and maintenance of learning communities for teacher research. Unlike other professions, which are organized to support research activities, teaching is a profession in which it is extraordinarily difficult to find enough time to collect data and it is almost impossible to find time to reflect, reread, or share with colleagues," (p.91)

In our brief encounter in the hall, my colleague told me she was quitting the group. "You have to understand," she said, "I have lunch meetings scheduled almost everyday of the week. I have absolutely no time for myself. If this work is important, we should be paid or given time to do it." I asked her to be patient.

continued on page 11



School Writing Project Workshops unite teachers from area schools and districts.

“What’s In This for Me?” African American and Latino Teachers Gain from Cultural Conversations

by Connie Floyd, Cultural Conversations Coordinator, School Literacy and Cultural Project

In the spring of 1997 the first group of Cultural Conversations teachers met. We talked about ourselves, the changes in the school population along racial lines, and we pondered what to do about “it”. The “it” was the ineffectiveness of regular teaching strategies in reaching some of the children. Within that group of 10 teachers, there was one Latina (female) teacher, one African American female teacher, one White male teacher and seven White female teachers. I could see what the teachers of color gave, but what did they get?

The idea for Cultural Conversations grew first and foremost out of the belief that reciprocal professional relationships are not only possible but powerful. The key word is reciprocal. From my colleagues I learned something and in turn they learned something from me. From the very beginning however, the balance of who learns what in Cultural Conversations has seemed uneven. It is a widely held belief that White teachers are in need of new information to effectively serve the ever-growing number of African American and Latino students in our public schools. But what do African American and Latino

“It is imperative that classroom teachers of color be heard and their areas of expertise acknowledged.”

teachers gain from professional development opportunities like Cultural Conversations? As a Middle school teacher said just last week, “What’s in it for me?” From analyzing seminar notes, transcripts, evaluations, and teacher interviews, I believe African American and Latino teachers get an opportunity to develop professional language about their own culturally-based teaching strategies and gain some recognition and respect from their peers about their ability as teachers.

Cultural Conversations seminars have been conducted in many mixed-race elementary and middle schools. In our invitation to participate, we request the most diverse group possible. We say out loud that no participant is expected to speak for his or her race, only for himself or herself. The reflections teachers submit at the end of each session speak to the sometimes newfound respect the White teachers have for the teaching strategies of teachers of color. “I read the words of Lisa Delpit, ‘talk to them like their mamas do.’ But I never saw it as a tool for teaching till Mrs. Jones described her classroom management style.” The reflections of the teachers of color speak of the sometimes newfound sense of worth given to them by the White teachers for their teaching abilities. “I really liked the exercise today, only people of color talking to each other, then White people talking to each other. I watched the faces of the listening White teachers. They really heard us,

some even took notes.” To paraphrase Lisa Delpit in *Other People’s Children*, people are the experts of their own lives. I know this is true for teachers. We all come to classrooms with life experiences that impact our teaching. Those of us who come from traditional teacher education programs come with a mainstream professional teaching vocabulary. The strategies we learned in college work well enough with some children. The strategies many teachers of color bring from a life in and out of schools sometimes serve as a bridge for many other children. Most teachers of color have not received recognition for this expertise. As an example from my own teaching experience, I have been “spoken to” by administrators about the firm, often critically described as authoritarian, tone of my voice, particularly at transitioning times in the classroom. I spent many years working on changing this aspect of my tone of voice. Teaching diverse students has shown me that some students, more than some others, need clearly and firmly given directions which include a defined expectation of behavior. I now refer to my voice as having a decisive tone and see it as one of my most effective cross-cultural teaching strategies. I believe that many teachers of color have similarly proven teaching strategies which have yet to be named. With the numbers of African American, Latino, and Asian Pacific Islander pre-service teachers at an all time low, it is imperative that classroom teachers of color be heard and their areas of expertise acknowledged.

The Cultural Conversations project was established to help teachers and others in the school community better serve the children before them. We looked at the statistics which say that public school student populations are becoming more and more diverse. We also looked at the statistics that show the racial breakdown of students in teacher education programs across the nation—most are White, middle class, Midwestern females. In order to serve the children in our public schools and not see the differences in their lives as problems or deficits, we must have voices from similar backgrounds in our public school classrooms and offices, as well as in our pre-service and professional development teacher education programs.

I began this with the question, “What’s in this for me?” My answer and those of past participants of Cultural Conversations is an opportunity to “name” the teaching strategies that work for them in diverse classrooms and in so doing, gain respect and recognition for successful teaching. My hope is that experiences of teachers of color in and out of school and consequently, the knowledge and skills they bring to the classroom will be seen as necessary tools to teaching our diverse students, as necessary as books, pencils, and paper.

(The title reflects the ethnicity of past Cultural Conversations project participants, but the research and statistics referenced include Asian Pacific Islanders.)



Valenzuela Wins Major Book Award

by Linda McNeil, Co-Director

Angela Valenzuela has been awarded the nation's highest prize in education research for her book ***Subtractive Schooling: U.S.-Mexican Youth and the Politics of Caring***. The prize is the American Educational Research Association Outstanding Book Award, awarded annually by this 22,000-member organization of education researchers on the basis of a national nominating process and review by a panel of distinguished scholars. ***Subtractive Schooling*** is based on Valenzuela's sociological study of students' education experiences in a Latino high school.

The study was conducted under the auspices of the Rice Center for Education while Valenzuela was on the faculty of the Rice Department of Sociology. Funding for the research was provided by Fulbright and Jaworski, Price Waterhouse, Andrews and Kurth, Towers Perrin, Union Texas Petroleum and Center for Education core funds from The Brown Foundation, Inc. Valenzuela is currently associate professor of education and of Mexican-American Studies at the University of Texas - Austin.

This book is based on a three-year quantitative and qualitative study of youth attending a virtually all-Mexican, inner city high school in Houston, Texas. Because of the generational diversity of the school's population, Valenzuela was able to explore and confirm the prevalence of particular achievement patterns in current scholarship on immigrant/nonimmigrant youth. Valenzuela found that immigrant, first-generation youth not only outperform U.S.-born, Mexican youth, they also exhibit a stronger, pro-school ethos. However, she adds, this was only evident among regular-track youth who are not located in the more privileged rungs of the curriculum. These findings allude to larger processes embedded in the way that the schooling system itself "structures" students' orientations toward school (e.g., through the structure of the ESL program). Moreover, these structures have bearing on the attitudes and the perceptions that immigrant and nonimmigrant peer groups develop toward each other over time - often in a magnified way. Rather than schools being additive for U.S.-Mexicans - meaning that they are organized to produce fully vested bilingual, bicultural, and biliterate Mexican Americans - Valenzuela concludes that they are woefully subtractive. Thus, a key consequence of schooling is the depletion of social, cultural and linguistic resources in ways that compromise the achievement potential of the group as a whole.

continued on page 11

Ways of Worldmaking in Asian Cultures

by Richard Smith, Project Director, Asian Outreach

Over the past year I have been working on several projects which unite my ongoing academic interest in the way knowledge is constructed, represented, transmitted and transformed. These include researching and writing a book about the Yijing (*Classic of Changes*); contributing to a volume on Asia-oriented pedagogy; participating in an international, multi-institutional research and curriculum project (The Transnational China Project); and continuing a program of teacher-training in Houston, based on the theme "Ways of Worldmaking in Asian Cultures."

My book in progress looks at the "globalization" of the Yijing. I plan to show how the Yijing "travelled" across space and time over some three millennia--not only within China, but also beyond, including Korea, Japan, Vietnam, Tibet, Europe and the Americas.

My essay on pedagogy, "Some Strategies for the Classroom (and Beyond)," will be published as the initial chapter in a volume sponsored by Kyushu University (Fukuoka, Japan) for Japanese instructors of non-Japanese college students.

The Transnational China Project at the Baker Institute explores and evaluates the forces shaping the rise of mass-media oriented, consumer societies in the Greater China region--particularly the influence of the transnational circulation of

people, technologies, commodities and ideas. An international network has been created of academic and cultural institutions capable of bringing together experts from around the world to discuss and debate research issues, publish papers and monographs, and transmit useful information to wider audiences--both in the United States and Asia. Our audio-visual and textual resources will provide a lively, forceful, up-to-date and authentic "inside" view of the forces transforming contemporary Chinese culture, as well as the intellectual debates that these changes continue to provoke. A web site (<http://www.ruf.rice.edu/~tnchina/>) has been developed to make these unique resources available for both course development and research.

How Can Teachers Learn Asian Cultures?

In the spring and summer of 2000, my colleagues and I plan to offer day-long "Saturday Seminars," based on the "Ways of Worldmaking" approach (emphasizing traditional and contemporary Asia), but tailored to specific teaching areas of participants. These modules can easily be adapted for use in teaching about cultures other and those of Asia. These weekend seminars will encourage participants to explore various cross-cultural comparisons and to experiment with different styles of learning.

For more information call the Center for Education at (713)348-5145



Making Knowledge Accessible , continued from page 1

saw our role as making accessible to our students the literature we had studied and the writers we ourselves were just learning about – especially Black poets and fiction writers. This was Nashville. Our curriculum already included the Fugitive Poets of the New South, white males who had studied or taught at Vanderbilt. Why weren't we teaching the Black poets who had taught or studied or been Poet-in-Residence at Fisk, one of the city's Black universities? We copied the poems, created our own Black anthologies and

“...teachers developed curricula - out of their knowledge of their subjects and their understanding of their students - not scripted by standardized test drills or numbered lists of state objectives.”

learned along with our students. We teamed to create mini-units on varied literary themes; the students created the district's first-ever accredited course designed and co-taught by students, a study of international literary classics.

So how did I become curious about making knowledge *inaccessible*? The question was never academic! Every time we ordered a recording of a Black poet (the Ruby Dee and Ossie Davis recording of Langston Hughes' dramatic monologues was my students' favorite), the librarian turned the order into one for a Shakespeare play recording – this before I knew the term "cultural reproduction." This same librarian thought the book *Blood Brother*, about a Native American boy and his European American friend, meant "soul brother"; she took the book off the shelf. She did not want to order any history books written after World War II or any that called the War Between the States the Civil War. Her best friend on the faculty, the one English teacher whose library book orders were actually processed, taught her students that Jesus spoke King James English (and thus she put the *King James Version of the Bible* on her book report list, not for its spiritual or literary qualities but for Jesus' English!).

Our students were trying to make sense of the war in Vietnam, still not yet ended. The city had been late in confronting this war and late in enacting the legal victories of the Civil Rights movement. Our students were hungry for real information and for books and stories that would help them figure out their own values in such a time. We created wonderful learning experiences (knowledge access), but we also ran into barriers – some of them cultural, some of them bureaucratic (knowledge control).

“The old forms of discrimination, taking Blood Brother off the shelf and omitting Black poetry, were overt. We could see them and we knew where they came from. The new forms of discrimination are more complicated and full of technical language.”

This seems like old history. The librarian and her friend seem like caricatures out of Dickens. But the English teacher who thought Jesus spoke English had another strange quirk: she taught her students to write using "the five-paragraph essay." Their writing had perfect indentations, with exactly five sentences in each paragraph, but the papers said almost nothing. We found it bizarre then. We find it official policy now. The centralizing standardizations teachers face today have their roots in the most restrictive, the least educational practices from the past (while accrediting a student-designed literature course of great substance remains a one-time event).

The tug between making knowledge – as authentic and useful knowledge and real, substantive skills – accessible to our students and watching those forces which closed off topics or information sources to these curious students seemed in my early years as a teacher to be idiosyncratic to that one suburban high school. But as I have gone into other settings to study what is taught in schools – and to whom – I have found that the tension between knowledge access and knowledge control is built into the very structures of our schools. And as our school systems become more bureaucratic, more centralized and standardized, we find that it is our richest cultural heritage that is most vulnerable, most marginalized, in schools. It is the five-paragraph essay – vacuous and useless back then, damaging now in its silencing of the voices of our diverse students – that has been made the official form of writing on which our students are measured.

In *Contradictions of Control*, I wrote about teachers who reacted to controlling administrative environments by bracketing off their own best knowledge of their subjects and teaching instead an artificial "school knowledge," which neither they nor their students believed. They went through the motions to satisfy the bureaucratic requirements for course credits. (I called this "defensive teaching.") In *Contradictions of School Reform*, which will be published this spring, I write about the ways standardized testing is reshaping school knowledge into an artificial curriculum of little value beyond producing scores on the tests. In this book, I show how extraordinarily rich and creative teaching in urban schools came to be watered down and the teachers and students alienated when the state imposed a standardization of curriculum and testing in the name of school improvement.

The subtitle of the book is "The Educational Costs of Standardized Testing." One of the costs documented in the book is the new forms of discrimination created when children in poor and minority schools (historically low-

continued page 11



Teaching, continued from page 1

some of the best young minds in the country. Over the years, I have formally taught in excess of 5,000 students. As alumni, many of them have shared with me how I as a teacher had helped them opt for a career in science or medicine. Some have also expressed gratefulness that I had helped them realize that science would not be part of their career plans and that they are now much happier as a lawyer or such!

To hear that one has had some small part in making someone else realize success in life is compensation beyond anything else I can imagine.

“The teacher personifies what is taught and should show a love and enthusiasm for it.”

Over the past forty years, I have taught introductory undergraduate to advanced graduate courses in the Departments of Chemistry, Biology, Ecology & Evolutionary Biology and Education at Rice, and Experimental Medicine at Baylor College of Medicine. Although these disciplines are diverse and the levels of presentation wide, the underlying principal is common to all. I, as teacher, must form my own conceptual understanding of the subject. That means for me an internalization of the material, going beyond the specific disciplinary content to a truly intuitive understanding of the subject. The teacher personifies what is taught and should show a love and enthusiasm for it. This enthusiasm should be felt and adopted by the students who then are ready to discover the joy and thrill of learning for themselves. When that transformation happens, teaching becomes a powerful cooperative dialogue between two people, the teacher and the student, and as a consequence both lives are enriched.



Ronald L. Sass: Professor of Biology, Chemistry and Education and Co-Director of the Center for Education. A member of the Rice faculty since 1958, Sass received his Ph.D. in physical chemistry from the University of Southern California and his B.A. from Augustana College.



Ron Sass

Honors: He was a postdoctoral fellow at Brookhaven National Laboratories studying neutron scattering. As a Guggenheim Fellow he was a member of the Department of Theoretical Chemistry at Cambridge University. As a National Research Council Senior Fellow he worked with NASA as a member of the Global Tropospheric Experiment research team in Alaska and northern Canada.

Current Research Interests: Biogenic emission of radiatively active atmospheric trace gases from natural and agricultural wetlands. He serves as a co-convenor of the International Geosphere Biosphere Program/International Global Atmospheric chemistry focus group on Exchange of Methane and Other Trace Gases in Rice Cultivation. He has served as a consultant to the Environmental Protection Agency on Global Warming Issues in Agriculture and as an external advisor for the United Nations Development Program Interregional Research Program on Methane Emission from Rice Fields in Asia. He also works with the Intergovernmental Panel on Climate Change to establish guidelines and values for national greenhouse gas inventories throughout the world. Former research interests include molecular and crystal structure, invertebrate calcification, the structure and function of cardiac and skeletal muscle; optical diffraction and image reconstruction, and image enhancement of electron micrographs. He has published over 130 scholarly works on these and other scientific subjects.

As a teacher: Sass has been a four-time recipient of the highly prized Brown Teaching Award, named a Minnie Stevens Piper Professor of 1999 and a recipient of the Salgo-Noren Distinguished Professor Award and the Rice University Award of Highest Merit among others. As Co-Director of the Rice University Center for Education, he has served as a co-project director of the Middle-School Model Science Laboratory Project and of the Baylor Medical School/Rice University Minority Honors Pre-Med Academy. He has been a member of the College Board Science Advisory Committee and chairman of the Educational Testing Service Chemistry Achievement Test Committee.

He is a member of Phi Beta Kappa, Phi Lambda Upsilon, Sigma Xi, National Science Teachers Association and the American Geophysical Union.



Whole School Change

Coalition of Essential Schools Texas/Greater Houston Area

Barbara Reed, Interim Director

After five years of working with schools and building a foundation for growth, Doris Rodgers-Robins recently resigned as the Director of the Texas/Greater Houston Area Coalition of Essential Schools. Ms. Robins is now Principal of the the TSU/Lab School in Houston ISD. We will miss Ms. Robins' leadership but wish her the best as she uses her experience in reform to make the lab school a model school.

As Interim Director, I plan to continue building a strong foundation necessary to support area reforming schools. Our first order of business will be to revitalize our Advisory Board and search for a new director. In addition, the Texas/Greater Houston Area Center of the Coalition will be working with schools in the implementation of the Comprehensive School Reform Design Grant for the year 1999-2000. Under this federal grant awarded through the states, the center serves schools in the Houston area and in Louisiana.

The Texas/Greater Houston Area had greater representation than any other area in the United States at the Coalition of Essential Schools Fall Forum in Atlanta, Georgia. This year's Fall Forum will be held in Providence, RI. We look forward to seeing the Texas region as well represented as it was in Atlanta.

Some of our accomplishments over the past year include:

Coalition Member Schools in Texas Region:

- **Paschal High School** – Fort Worth ISD - One of the original member schools, Paschal is a school within a school, approximately 300 students within a much larger urban high school. Great emphasis is placed on student as worker and on exhibitions.
- **Quest High School** – Humble ISD - A suburban high school of approximately 300 students. Excellent Coalition model in which teachers are coaches and students graduate by exhibition.
- **Westbury High School** - Houston ISD - One of the original member schools. Students graduate by portfolio and exhibition. Active Critical Friends Groups.

Exploring Schools:

- **Best Elementary** - Alief Independent School District - Best is an urban school of approximately 900 students. In its second year of involvement and emphasizes authentic assessment and instruction. Strong professional development model where students are workers.
- **Black Middle School** - Houston Independent School District - Black is an urban middle school, of approximately 1200 students. In its first year and beginning to work on authentic assessment.
- **Eisenhower High School** - Aldine Independent School District - Eisenhower is an urban high school of approximately 4000 students and is in its fifth year as an exploring school. The school is currently developing a graduation by exhibition process. It is an Annenberg Beacon School and it is used as a model for assessment of schools by portfolio. Critical Friends Groups are a major part of reform.
- **Johnston Middle School** – Houston Independent School District - Johnston is an urban middle school of approximately 1200 students and is in its second year as an exploring school. The school is developing the process of graduation by portfolio. Critical Friends Groups are a major part of reform.
- **Olle Middle School** - Alief Independent School District - Olle is an urban middle school of approximately 1200 students and is in its second year as an exploring school. Professional development includes authentic assessment and instruction, curriculum integration, and collaborative inquiry facilitation. They have active Critical Friends Groups.

Networking Schools:

- Hilliard Elementary School is an urban elementary school of approximately 900 students in its second year as a networking school.

- Lake Elementary, K-8, St. Aumant, Louisiana is a suburban school of approximately 900 students, in its first year of involvement. The school has active Critical Friends Groups.

Core Professional Development Offered by the Coalition:

- **Five-Day Professional Development of Six-Member School Teams:**
Authentic Assessment and Instruction; Curriculum Integration; Learning Styles and Multiple Intelligences; Collaborative Inquiry Facilitation; Teaming; Portfolio and Exhibition
- **Coaching of:**
School teams as follow-up to five-day professional development;
School teams developing a Plan for Graduation through Portfolio and Exhibition; Collaborative Inquiry facilitators; CFG coaches;
Administrative teams of member and exploring schools
- **One-day Work with Faculties in:**
Coalition of Essential School Awareness; Introduction to the Ten Common Principles

Comprehensive School Reform Demonstration Grant Schools. CES provides professional development, coaching and facilitating teams in the areas of Critical Friends coaches, Authentic Assessment, Administration, Curriculum and Collaborative Inquiry. This work will continue through the Spring of 2000.
Best Elementary – Olle Middle School – Black Middle School

Schools Using Annenberg Funds to Implement Reform. CES provides professional development and Coaching in the areas of authentic assessment, student-led conferences, the Capstone Exhibition Process and Critical Friends. This work will continue through Spring 2000.
Hilliard/Northwood/East Mount Houston Learning Community
Johnston Middle School – Eisenhower High School

Development of Reaffirmation Proposal for Westbury Senior High School

CES provides coaching of groups involved in the “taking stock” process and the training of 9 and 10th grade teams in authentic assessment and the portfolio process.

CES's Collaborative Work with the Center for Education:

- Reforming Schools Institute
- Promotion of Cultural Conversations as a Part of CES School Reform

For more information on the Coalition, call (713) 348-4713



Making Knowledge Accessible , continued from page 8

scoring on these tests) are made to drill day after day for the tests, while children in more privileged schools are studying the real subjects - doing science labs, reading books,-- thus widening the already persistent disparities in access to a real education.

The old forms of discrimination, taking *Blood Brother* off the shelf and omitting Black poetry, were overt. We could see them and we knew where they came from. The new forms of discrimination are more complicated and full of technical language (cut scores, accountability). We can't fully understand their effects on students' access to knowledge without going into classrooms and listening to teachers and students. And we can't identify the barriers that limit that access to education without careful analysis of the many factors which lie behind the labels and numbers.

I expect to keep studying what is taught in schools. My motivation comes from the strong evidence that children are capable of learning almost anything when we really teach them. But if they are to learn, the book needs to be back on the shelf. And the number of paragraphs must follow, not drive, what our students are learning to say.

As a young teacher, I never dreamed that the legacy of those exciting, yet frustrating years, would be the chance to work with Center for Education colleagues - and the teachers in the Center's projects - to break down barriers that separate the children in the schools from their opportunities to know.



Linda McNeil is the author of *Contradictions of Control: School Structure and School Knowledge* (Routledge 1986) and *Contradictions of School Reform: The Educational Costs of Standardized Testing* (Routledge 2000, forthcoming).

Valenzuela continued from page 7

The awards committee, according to Professor David Pearson of Michigan State University, its chair, found *Subtractive Schooling* to be rigorous in its research, "the right book to give voice to this important subject." Previous winners of the AERA Outstanding Book Award include Sara Lawrence Lightfoot (1984), John I. Goodlad (1985), David C. Berliner & Bruce J. Biddle (1996) and Linda Darling-Hammond (1998).

Angela Valenzuela continues to be an affiliate researcher in the Center and is working with Center researchers on the evaluation of the Houston Annenberg Challenge for School Reform. She is looking at what she is calling "additive schooling" in predominately Latino schools whose reform effort is based on dual language instruction.

Paradise Lost continued from page 5

I would visit with our Dean of Instruction to ask if we could use scheduled in-service time to work on our research and writing. The Dean had supported the program from its inception and had been excited about the formation of a study group. However, my request was met with an unequivocal "no." "The district in-services are mandatory. All teachers must attend without exception."

The finality of her comments left me dreading our next scheduled meeting two days later. The teacher research group we envisioned so optimistically during the summer seemed as hopelessly buried as the ungraded papers in my portable cart. It seemed our work would be preempted by "prescriptive materials, training and inservicing programs" (p. 101) that had little do with the life inside our classrooms.

The teacher research group we envisioned so optimistically during the summer seemed as hopelessly buried as the ungraded papers in my portable cart.

At our Tuesday meeting, I reported my conversation with the dean, and the withdrawal of one of our members from the group. The response was quite unexpected. "I've been thinking about a shared study question," said one teacher, "I think we should look at the portfolios. Are we really using them as an integrated part of our classroom instruction?" It seemed that no one but me doubted that the teacher research group would continue. The only question that remained for our small group was *how?* How do we find the time to make teacher research something that exists beyond our already overburdened work loads (p. 21)?

Reference: Cochran-Smith, Marilyn & Lytle, Susan *Inside Outside Teacher Research and Knowledge*. New York: Teachers College Press

Upcoming Events

Mar. 29, 2000, 4:30 p.m.
Hazel Creekmore Memorial Curriculum Collection Symposium: Professor Jeannie Oakes, UCLA, Speaker

Apr. 14, 2000, 4:30 p.m.
School Writing Project, Middle and High School Student Readings

Coalition of Essential Schools Fall Forum 2000
Providence, RI. Questions about the Fall Forum should be directed to Adam Tucker, Phone: 510-433-1451; (atucker@essentialschools.org)



The Center for Education is an organization of research and teacher development programs which share common goals in reducing teacher isolation, reorganizing schools to make students more involved in learning, and rethinking ways to evaluate students' learning.

The Center forges links between research, policy, curriculum, learning and school organization. Over the past twelve years, the Center has grown to be a major force in school change in Texas, working closely with school practitioners, community leaders and policy makers, and children.

Programs, workshops, speakers, or consulting can be organized based on administrators, teachers and schools needs. Center teacher development and research programs include:

Asia Outreach and Global Education
Coalition of Essential Schools
Hazel Creekmore Curriculum Collection
Latino Family-Schools Connection
Model Science Lab
Evaluation & Research
School Literacy and Culture Project
School Science Project
School Mathematics Project
School Writing Project

Feel free to contact the Center at (713) 348-5145.



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