

On Common Ground

Strengthening Teaching through School-University Partnership

YALE-NEW HAVEN TEACHERS INSTITUTE

NUMBER 12, SPRING 2008



SAMUEL F. B. MORSE, HOUSE OF REPRESENTATIVES, 1822-23

Teachers Institutes for the Nation

By Senator Joseph I. Lieberman

Mr. President, today I am introducing legislation, along with my colleague from Connecticut, Mr. Dodd, that will strengthen the content and pedagogy knowledge of our present K-12 teacher workforce and thus ultimately raise student achievement.

Our proposal would establish eight new Teachers Professional Development Institutes throughout the Nation each year over the next five years based on the model which has been operating at Yale University for over 30 years. Every Teachers Institute would consist of a partnership between an institution of higher education and the local public school system in which a significant proportion of the students come from low-income households. These Institutes will strengthen the present teacher workforce by giving each participant an opportunity to gain more sophisticated content knowledge and a chance to develop curriculum units with other colleagues that can be directly applied in their classrooms. We know that teachers gain

(continued on page 31)

By Representatives Rosa L. DeLauro and Joe Courtney

Almost six years after enacting the No Child Left Behind Act, we have a lot more work to do to fix our failing K-12 education system. We have made some progress helping parents, teachers, and policy makers identify which groups of students are learning and which groups continue to falter. But inflexible implementation and insufficient resources have undermined our goals, while the law's one-size-fits-all approach fails to accurately measure progress. Today, far too many teachers still do not have the support they need to do the best job they can educating our children. At the same time, even as we know just how essential subject-matter knowledge is to teacher quality, very few of the nation's faculties of arts and sciences that specialize in the subjects that form the core curriculum of public schools are involved in preparing K-12 teachers.

We have introduced the "Teachers Professional Development Institutes Act," (H. R. 3209) to remedy this problem. Each year over the next five years, the legislation would establish eight Teachers

(continued on back cover)

On Common Ground: Legislating, Planning, and Teaching

By Thomas R. Whitaker

This number of *On Common Ground* charts the further progress of the Yale National Initiative in 2006 and 2007. Our double feature, "Institutes for the Nation," contains the remarks of Senator Joseph I. Lieberman as he and Senator Christopher Dodd introduced to the United States Senate a Bill "to support the establishment and operation of Teachers Professional Development Institutes," along with a statement by Representatives Rosa L. DeLauro and Joe Courtney describing the House Bill they have introduced for the same purpose. Bills S. 2212 and H.R. 3209 would authorize \$30 million over five years to help establish as many as forty new Institutes. Most immediately, this funding would assist in establishing Institutes in the communities now exploring or planning for that possibility: Charlotte, NC; New Castle County, DE; Richmond, VA; Santa Fe, NM; Atlanta, GA; Chicago, IL; and San Francisco, CA.

On our cover, to complement "Teachers Institutes for the Nation" and also to point, like our other images, toward the importance of a broadly educated citizenry, we have placed a depiction of the House of Representatives by the nineteenth-century painter Samuel F. B. Morse. Many of us may already know this painter of historical scenes as the creator of a single-wire telegraph system and co-inventor of the Morse code. When he was a student at Yale College, earning money by his painting, he had attended a range of classes that included religious philosophy as well as mathematics, electricity, and the science of horses. (Many years later a new residential college at Yale would be named after that student.) This painting obviously testifies to his meticulous observation of architectural details. But as the French critic Jean-Philippe Antoine has said, it also presents communication as the crucial human activity. The night-scene, with its conversational groups, dramatizes the dedication of Congress to the principles of democracy. The two sources of illumination — the mail

clerks' lamplight in the foreground and the new Argand chandelier being lit by the doorkeeper high in the background — suggest both democratic industry and technological progress. No grand oratory here, but people going about the daily workings of government.

We follow "Teachers Institutes for the Nation" with a piece by Richard Ekman, President of the Council of Independent Colleges. In "Small Colleges as Partners with School Systems," he notes that some 600 small institutions now graduate 20 percent of the new teachers in the nation. In small colleges, as he points out, "the institutional ethos already emphasizes teaching effectiveness and the most popular pedagogies include direct collaboration between students and faculty members on research projects." It is very likely, he says, "that new teachers who graduate from these institutions will have experienced firsthand the results in the classroom of excellent role models — faculty members who are actively engaged in teaching and who view it as the most important of their responsibilities." Why then should such faculty members not be more actively recruited to lead seminars in new Teachers Institutes? Partnerships between small colleges and school systems may be one important way of expanding the League of Teachers Institutes across the nation.

Teachers, school district personnel, and university faculty members from the communities that are already exploring or planning for an Institute, along with others from the Institutes in Pittsburgh, Houston, Philadelphia, and New Haven, gathered at Yale this October for the third Annual Conference of the Yale National Initiative. The Conference included a panel of Fellows from the National Seminars of 2007, roundtable discussions on the Teachers Institute Approach, reports on exploring or planning a new Teachers Institute, a session on planning national seminars for 2008, and roundtable discussions on planning or strengthening a Teachers Institute. It also included smaller

meetings involving City Representatives, the National Steering Committee, the National University Advisory Council, and the League Institute Directors. Though we can't bring our readers a full report on the stimulating conversations elicited by these meetings, we do include in our centerfold "Voices from the October Conference," a sampling of comments made about the National Initiative and the distinctive kind of professional development it promotes in relation to important educational needs today.

After Richard Ekman's piece, we also include two sketches of current planning for new Institutes. Steven H. Godowsky, Superintendent of the New Castle County Vocational-Technical School District, provides in "Creating a Delaware Institute" a step-by-step account of the process that, from 2004 to the present, has been directed toward establishing a Teachers Institute that would exist not only in his own district but in others as well, and so would "become embedded in our Delaware system of professional development." Leslie Carpenter, Superintendent of the Santa Fe Public School District, then gives us in "Planning for a Teachers Institute in Santa Fe" a similarly detailed account of the process that, from 2005 to the present, has now led to a Declaration of Intent to Submit a Planning Proposal for the Santa Fe Teachers Institute. We include with her piece one of Georgia O'Keeffe's striking abstractions, *In the Patio II*, which evokes the Santa Fe milieu in a way that leaves our imaginations free to posit a range of unspecified details.

We then turn to a broad sampling of the work done during the last two years by Fellows in the national seminars — and in their classrooms. First of all, we give examples of national seminars and curriculum units from 2007. In "Leading the Seminar on Renewable Energy," Professor Gary W. Brudvig suggests how that seminar could meet a variety of classroom needs. We include with his piece Grant Wood's *Stone City, Iowa*, one of his striking Iowa

(continued on page 4)

Contents

- 1 Teachers Institutes for the Nation
Joseph I. Lieberman
Rosa L. DeLauro and Joe Courtney
- 2 Editorial: Legislating, Planning, and Teaching
Thomas R. Whitaker
- 5 Small Colleges as Partners with School Systems
Richard Ekman

Planning for New Teachers Institutes

- 6 Creating a Delaware Teachers Institute
Steven H. Godowsky
- 7 Planning for a Teachers Institute in Santa Fe
Leslie Carpenter

Some National Seminars and Curriculum Units in 2007

"Renewable Energy"

- 8 Leading the Seminar on Renewable Energy
Gary W. Brudvig
- 9 When They Wonder . . .
Cherisse Campbell
- 10 The Power of the Sun
Katya Danielle Gothie

"Keeping the Meaning in Mathematics: The Craft of Word Problems"

- 12 Leading the Seminar on the Craft of Word Problems
Roger E. Howe
- 13 Exploring Word Problems with Singapore Bar Models
Valerie Schwarz
- 14 Quadratic Equations in Word Problems Students Can Relate To
Nancy Rudolph

16 Voices from the Annual Conference

"Latino Cultures and Communities"

- 18 Leading the Seminar on Latino Cultures and Communities
Stephen J. Pitti
- 19 Examining Mexican Immigration through First-Person Points of View
Nicole Marie Schubert
- 20 Teaching an African American Class about Latin American Culture
Samuel A. Reed, III
- 22 Reading Images in Historical Context
Sara E. Thomas

Some Curriculum Units from the National Seminars of 2006

From "Stories around the World in Film," led by Dudley Andrew

- 24 Learning to Read Foreign Films
Laura Viviana Zoladz

From "The Supreme Court in American Political History," led by Robert A. Burt

- 25 Entering the Chinese-American Experience
Deborah Samuel

From "Children's Literature, Infancy to Early Adolescence," led by Paul H. Fry

- 26 Building Cultural Bridges through Literature
Nancy Ann Wasser

From "Native America: Understanding the Past through Things," led by Mary E. Miller

- 28 Things, Foods, and How We Know
Jennifer B. Esty
- 29 Native American Traditions and Identity in the Art Room
Cristian Antony Koshock

Credits: Front Cover: Samuel F. B. Morse. *The House of Representatives*. 1822-1823. Oil on canvas, 86 ½" x 130 ¾". Corcoran Gallery of Art, Washington, DC Museum Purchase, Gallery Fund. **Page 7:** Georgia O'Keeffe. *In the Patio, II*. 1948. Oil on linen, 17 ¾" x 29 ¾". Collection of the New Mexico Museum of Art. Bequest of Helen Miller Jones, 1986. **Page 8:** Grant Wood. *Stone City, Iowa*. 1930. Oil on wood panel. Joslyn Art Museum, Omaha, Nebraska, Gift of the Art Institute of Omaha, 1930 (JAM1930.35.) **Page 10:** Vincent van Gogh (1853-1890.) *Pollard Willows and Setting Sun*. 1888. Rijksmuseum Kroeller-Mueller, Otterlo, The Netherlands. Photo Credit: Art Resource, NY. **Page 12:** Lawrence Weiner. *Give & Get and Have & Take*, The Wrong Gallery Installation. 2005. Edition of 1000 sets of two. Brass stencils. 6 ½" x 2" and 7 ⅛" x 2". **Page 14:** Eadweard Muybridge. *Jumping, Animal Locomotion*. 1887. Courtesy of Beinecke Rare Book and Manuscript Library, Yale University. **Page 18:** Edward Gonzales. *Songs For Our Children*. 2002. EdwardGonzales.com. **Page 19:** Christo and Jeanne-Claude. *Running Fence, Sonoma and Marin Counties, California*. 1972-76. Photo: Wolfgang Volz. © Christo 1976. **Page 20:** Jacob Lawrence. *Students with Books*. 1966. Egg tempera on hardboard, 23 7/8 x 35 7/8". © 2008 The Jacob and Gwendolyn Lawrence Foundation, Seattle / Artists Rights Society (ARS) New York. **Page 22:** Yolanda Lopez. *Portrait of the Artist as the Virgin of Guadalupe*. 1978. Oil pastel on paper, 28" x 32". Collection of the artist. **Page 23:** Jose de Ribera y Agromanis. *[Image of the oath of the Virgin of Guadalupe as patron saint of Mexico City]*. 1778. Museo de la Basilica de Guadalupe, Mexico City, Mexico. Courtesy of the Beinecke Rare Book and Manuscript Library, Yale University. **Page 25:** Isaiah West Taber. *Chinese Vegetable Peddler in San Francisco, Cal.* Year unknown. Black and white photograph. California Historical Society, FN-08620. **Page 26:** Alfredo Chaverro. *Lienzo de Tlaxcala*. 1892. (Mexico City.) Courtesy of Mary Miller. **Page 29:** Thomas Eakins. *Frank Hamilton Cushing*. 1895. Oil on canvas 90" x 60". Gilcrease Museum, Tulsa, Oklahoma (0126.2315). **Back Cover:** Currier and Ives publishers. *The Capitol in Washington*. Year unknown. Colored print. Photo credit: Erich Lessing / Art Resource, New York.

Whitaker: Legislating, Planning, and Teaching

(continued from page 2)

landscapes with boldly geometrized forms and stylized contours. Though Wood's idealized regionalism may have gone out of fashion since the early 'thirties, this image of human community amid bountiful farmlands suggests the continuing availability of nature's own processes of renewable energy. Cherisse Campbell of New Castle County, in "When They Wonder . . .," then shows how her curriculum unit is arousing fresh interest in the high school subject of chemistry as it leads toward a study of biodiesel fuel. And Danielle Gothie of Santa Fe, in "The Power of the Sun," shows how her curriculum unit is engaging elementary students in the study of solar energy and its possible uses. With her piece, which emphasizes the worldwide presence of that energy, we include the sun-drenched and burgeoning Mediterranean landscape of Vincent van Gogh's *Pollard Willows and Setting Sun*.

Professor Roger Howe, in "Leading the Seminar on the Craft of Word Problems," then instructs us in the importance of that craft for the teaching of mathematics at any level. We accompany his piece with *Give & Get* and *Have & Take*, a wittily appropriate verbal-and-visual image by that provocative master of conceptual art, Lawrence Weiner. Appropriately enough, this image consists of the stencils that Weiner has provided for the actualization of the piece in any location. Indeed, Valerie Schwarz of Richmond, in "Exploring Word Problems with Singapore Bar Models," then proceeds to show how visual strategies from Singapore, where proficiency in mathematics greatly exceeds that in our own schools, may be of use in our elementary classes in addition, subtraction, multiplication, and division. And Nancy Rudolph of New Castle County, in "Quadratic Equations in Word Problems Students Can Relate To," shows how word problems on projectile speed that are taken from the easily visualized field of sports can be very

helpful in an algebra class. We accompany her piece with Eadweard Muybridge's sequence of "stop-motion" photographs, *Jumping*. Like Samuel Morse, Muybridge had both artistic and scientific interests, and his photographic work is an important antecedent of the motion picture.

Professor Stephen J. Pitti then provides an account of his experience in "Leading the Seminar on Latino Cultures and Communities," stressing the importance of that topic at this moment in our national history. With his piece we include *Songs for our Children*, one of the engaging images of school life painted by the New Mexico artist Edward Gonzales. "I use my art," Gonzales has said, "as a way to create a better world for ourselves and our children."

These bills would authorize \$30 million to help establish up to forty new Institutes.

Nicole Schubert of Charlotte, in "Examining Mexican Immigration through First-Person Points of View," then describes several ways in which students can be brought toward an intimate understanding of the process of immigration. With her piece, as a transparently ironic commentary, we include a photograph of *Running Fence* by Christo and Jeanne-Claude. This environmental work of art, a veiled fence made from steel posts and steel cables, running through the California landscape and leading into the sea, was planned in 1973, when, after 17 stateless years, Christo became a United States citizen. The fence was completed, after many legal and bureaucratic difficulties, in 1976.

Samuel A. Reed, III, of Philadelphia, in "Teaching an African American Class about Latin American Culture," then focuses on some ways of increasing cultural understanding within a city in the midst of demographic transition. We illustrate his piece with one of Jacob Lawrence's brilliant

evocations of the educational process, *Students with Books* — a painting that may in fact depict the library in the 135th Street YMCA in New York City that is now known as the Schomburg Center for Research in Black Culture. We conclude this section with a piece by Sara E. Thomas of New Haven, "Reading Images in Historical Context," that describes a curriculum unit in art that is designed also to increase reading skills as it explores aspects of cultural history. Because her unit focuses on the challenge provided by artists who "appropriate" or revise a historical image — in effect providing viewers with a double context for the work — we have here included two pertinent images: the bold and controversial *Portrait of the Artist as the*

Virgin of Guadalupe (1978) by the Chicano artist Yolanda Lopez, and the more traditional (but also multicultural) *Virgen de Guadalupe* (1778) by the Mexican artist José de Ribera y Argomanis.

According to legend, of course, the Virgin had given the "original" image miraculously in a blanket to the Indian Juan Diego at Tepeyac, near Mexico City, in 1531. And a Nahuatl (or Aztec) account of this event from the 1560s asserts that she had announced herself to Juan Diego as "the Mother of all nations that live on this earth who would love me." It is understandable that the modern artist's personal appropriation of this well-known image of the Divine Mother should in turn have become an important image for many Chicanos — having been selected, for example, for a poster to promote Chicano scholarship.

Drawing upon selected national seminars of 2006, we then trace the further development in the classroom of a range of other curriculum units. In "Learning to Read Foreign Films," Laura V. Zoladz from New Castle County, who took part in the seminar "Stories around the World in Film," led by Dudley Andrew, describes her

(continued on page 11)

Small Colleges as Partners with School Systems

By Richard Ekman

After three decades, the key assumptions that undergird the Yale-New Haven Teachers Institute have been amply validated by experience. It's now clear that cooperation between an institution of higher education and the schools in its region will lead to benefits for both, and the cooperation is likely to be especially fruitful if it is based on a shared interest in the content of what is taught to students. Indeed, we've learned that cooperation that is carried out at a deeper level than the formal protocols signed by senior administrators is most likely to have long-term results, especially cooperation between school teachers and college professors. Moreover, the benefits do not flow in only one direction: the Yale-New Haven Teachers Institute has been able simultaneously to enhance the effectiveness of teachers and to increase students' learning.

The original Institute in New Haven has spawned offspring in a growing number of cities. So far, the model has drawn upon the resources of at least one major university in each city as it works with surrounding school systems. But in only one Institute, in Pittsburgh, have links between the public school system been made with a fine liberal arts college, Chatham, in addition to large universities. The results there have been encouraging.

To leave small colleges out of the equation may be bypassing some important opportunities. Of the 2,500 four-year colleges and universities in the U.S., only some 600 small and mid-sized colleges and universities offer programs primarily for undergraduates that are based on a general education curriculum in the liberal arts. Significantly, fully 80 percent of these smaller colleges and universities also operate programs of teacher preparation. These are usually heavily subscribed and, altogether, graduate 20 percent of the new teachers in the nation. This is a remarkable — even disproportionate — role for these

Richard Ekman is President of the Council of Independent Colleges.

institutions because they account for only 12 percent of the country's undergraduate students. In addition, half of these institutions offer master's level programs of in-service training for teachers, typically on a part-time basis. In other words, these 600 small colleges play a significant role in meeting the national demand for more and better prepared teachers.

The salient features of the Yale-New Haven Teachers Institute could be incorporated into partnerships between small colleges and nearby school systems. Often in small colleges, the institutional ethos already emphasizes teaching effectiveness and the most popular pedagogies include direct collaboration between students and faculty members on research projects. It is highly likely, therefore, that new teachers who graduate from these institutions will have experienced first-hand the results in the classroom of excellent role models — faculty members who are actively engaged in teaching and who view it as the most important of their responsibilities. Small colleges also do well in comparison with other types of colleges and universities in facilitating students' participation in campus activities. As these college students become teachers, their own students are likely to emulate those who taught them in their own classrooms. At the same time, the in-service programs offered by smaller institutions span the possibilities from courses on teaching methods and management, to courses in the disciplines of the arts and sciences that deepen teachers' knowledge of their fields and help them to teach those subjects more effectively.

Despite their small size, small colleges could play a very large role in a national effort to expand the use of the Yale-New Haven model. An important point is that, contrary to the stereotypes, small colleges are located in a wide variety of settings. About one-third are in rural areas; about one-third are in metropolitan areas; and one-third are in mid-sized towns. Except for the urban institutions, often the small college is both the major employer and the

main (or even only) source of educational and cultural enrichment for the community. Relations between the local school system and the college are, given these circumstances, necessarily robust and mutually supportive. Small scale can make possible more flexible and responsive programs than would be feasible in larger, more bureaucratic settings.

A key to these differences in institutional ethos may lie in the ways in which the teacher preparation programs are accredited. Although there is no requirement in most states that colleges and universities do more than obtain approval from the state government to offer any degree program, increasingly national accreditation is required — indeed, it is sought after. There are two national accreditors of teacher preparation programs. The National Council for the Accreditation of Teacher Education, which has been in business for a very long time, and the newer Teacher Education Accreditation Council, which began operations less than a decade ago. While both accreditors will gladly review both large and small institutions, TEAC's appeal has been particularly strong among small colleges. TEAC's standards minimize the emphasis on "input" measures (such as the number of courses offered in a particular subfield) and instead emphasize demonstrable results. Candidate programs must be able to show that the college students who are being prepared to teach are in fact good classroom teachers by the time they graduate. Moreover, when TEAC does measure "inputs," it looks more often at indicators of mastery of subject-matter by new teachers than at procedural or methodological factors. TEAC is increasingly of interest to large universities, as well as small colleges. The country is well on the way to a dynamic balance in which the two leading accreditors in this field compete and, in effect, keep each other responsive to the needs of colleges and universities.

In sum, the circumstances are now highly favorable for new efforts to extend the
(continued on page 9)

Creating a Delaware Teachers Institute

By *Steven H. Godowsky*

One of our District teachers learned early in 2004 about the Yale National Initiative through her involvement in the Rodell Foundation, a private non-profit dedicated to significantly improving the education of Delaware students. Shortly thereafter in the Spring of 2004, that teacher, Cary Brandenberger Riches, and Ray Theilacker, her colleague at the Howard High School of Technology, were invited to participate in the Intensive Session of the Yale National Initiative, in Paul Fry's poetry seminar. Both teachers came away from the experience enthusiastic, but more importantly, they were empowered by their expanded content knowledge and teaching pedagogy. I was struck by their level of excitement and the high value they placed on their Yale experience. In the year following the seminar, both teachers had their work published on Yale's website, and also successfully taught their units, which were carefully aligned to District and State curriculum standards. It was impressive work.

As superintendent of the New Castle County Vocational-Technical School District, I caught their excitement and knew early on that supporting the Yale National Initiative would result in important new learning for our participating teachers, and also could lead to quality professional development for potentially many more. Expanding that opportunity for other teachers became a priority. In the fall of 2004, Cary and Ray initiated a District conversation on the viability of a Delaware Institute modeled after their experience at Yale. These conversations quickly extended to other New Castle County School District leaders. Jim Vivian, Yale director, was most helpful guiding us in this conversation, as he was readily available to respond to our inquiries; in fact, he came to Wilmington for our initial discussion with the University of Delaware

Steven H. Godowsky is Superintendent of New Castle County Vocational-Technical School District in Delaware.

leaders and has graciously returned since to further our work. Ray Theilacker became our City Representative in 2006 and assumed responsibility for collaborating directly with our Fellows, serving as a school leader, and advocating for a Delaware Institute. Those early conversations centered on what a Delaware Institute might offer the teachers and students in our public schools, and how it could serve a population beyond the limits of one city, unlike Institutes elsewhere. At that point, it seemed wise as a first step to focus on New Castle County school districts, with the understanding that the ultimate goal is for all 19 of Delaware's school districts to participate in a statewide initiative. New Castle County, Delaware, has six school districts, serving approximately 60% of the state's students.

I approached Dennis Loftus, executive director of the University of Delaware's Academy of School Leaders (DASL), who quickly understood the possibilities of an Institute, and was helpful in arranging for a meeting with University of Delaware Provost Dan Rich and other university officials. Several informal meetings were held to discuss the Delaware Institute and the mechanics necessary to move forward. Additionally, the Yale model was presented at a Delaware Chief School Officers Association meeting. Shortly thereafter, four of the six New Castle County superintendents were able to commit to the planning process, and to support collaborative efforts to build a partnership with the University of Delaware. This became our first cohort group; together we would send a strong message to the University in our effort to gain their commitment for a Delaware Institute.

Two additional planning meetings were held and progress was made. While obstacles were recognized, it was made clear to us that the provost was receptive and felt a Delaware Institute was consistent with the University's long-term plans to create regional teacher professional development centers. The need for quality professional

development had become a high priority for the University. Building upon the success of the Yale National Initiative represents a potentially important component of the University's regional center concept. Other important activities were simultaneously taking place, including on-going discussions with our school district Fellows about what a Delaware Institute would look like, and what roles and responsibilities they would assume with that goal in mind. We have also identified representatives in each of the other three interested school districts who serve as part of our county-wide planning committee and as liaisons for their district. This past year, four new Fellows were chosen for our team of ten to participate in the 2007 summer national seminars. The teachers' excitement was redoubled through this further involvement. We are determined at this point to make a concerted effort to bring the Institute model to more New Castle County teachers.

The success of the Yale New Haven partnership serves as evidence that such a plan locally would benefit our teachers and students. The Yale model brings two constituencies together in a unique partnership focused on content expertise and effective delivery of instruction. The unique collegial structure of institute seminars will strengthen the academic bonds between the University and school teaching faculties — a union that directly benefits instruction in our schools.

Recently, a plan initiated through our state's business roundtable has been launched, called *Vision 2015*. The plan, although ambitious, was thoroughly developed over an 18-month period to build a sustained statewide partnership among all constituent groups in order to elevate the Delaware public school system to a world-class standard by the year 2015. It is our hope that the Yale Teachers Institute model will become embedded in our Delaware system of professional development as one of the key initiatives on the path to creating the best schools for our students.

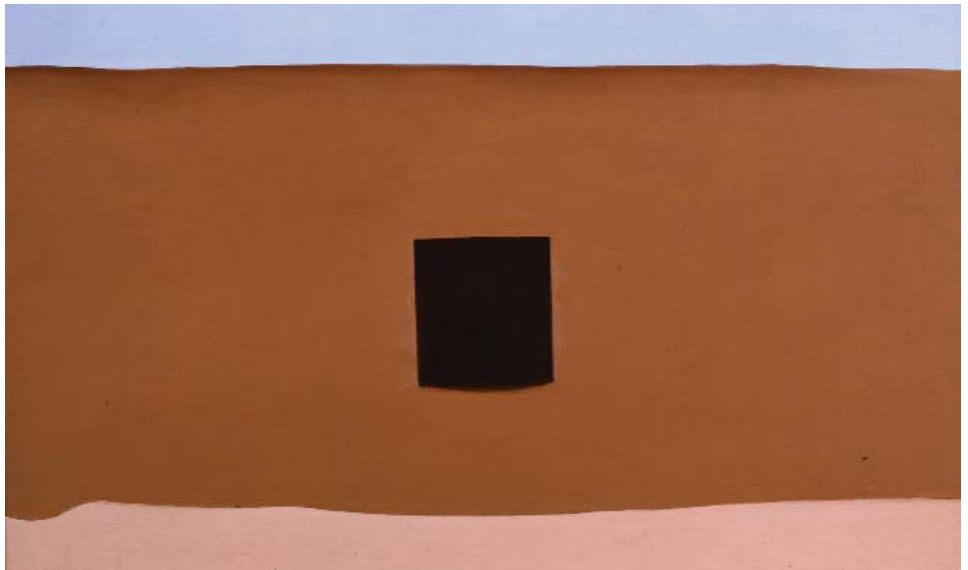
Planning for a Teachers Institute in Santa Fe

By Leslie Carpenter

My introduction to the Yale National Initiative came by way of a meeting in October 2006 with a group of Institute Fellows, who I am proud to say are Santa Fe Public School teachers. During this discussion, the room was abuzz with a rare enthusiasm and remarkable stimulation. The teachers spoke about pedagogical strategies, collegial exchange of ideas, articulation and interdisciplinary teaching of curriculum, and also provided examples of their Yale Institute experience in what had been a serious study in their respective fields. One of our 6th grade science teachers developed a unit on clean energy — one general unit on solar energy and the other related to developing a solar car. This is especially relevant in New Mexico as we are one of the leading states in the development of solar resources. This real world, practical education is already helping students connect their learning with the information they get from television, the media and the internet. Further, all of the Fellows have reported that their renewed commitment and enthusiasm has a contagious effect on parents, teachers and students alike. They made me believe that the work they performed with the Yale National Initiative could be instrumental not only in helping teachers gain critical knowledge regarding best practices in the teaching discipline, but also in giving SFPS a competitive advantage for attracting and retaining a superior teaching staff. By the meeting's end, the executive team determined to delve deeper and thus subsequently began the "Process" for planning to provide a platform for a Teachers Institute to begin a new era for Professional Development for the Santa Fe Public School District.

Both our students and our staff will greatly benefit from the addition of a Teachers Institute. Our District is focused on teaching and learning and on preparing every child

Leslie Carpenter is Superintendent of the Santa Fe Public Schools in Santa Fe, New Mexico.



GEORGIA O'KEEFFE, *IN THE PATIO, II*, 1948

with the skills they need to be successful — now and in the future. We are also focused on improving climate and culture in our District for our valued employees.

In regards to our valued employees, SFPS has had difficulty in recruiting and retaining quality teachers. This is in part due to the relatively low wages that teachers command in New Mexico. The average home in Santa Fe is approximately \$400,000 while starting teacher's salaries are in the \$30,000 range (well below the median New Mexico income of \$45,000). And in addition to financial dissatisfaction, teachers have long complained of inadequate professional development opportunities in order to qualify for advancement through the State's stringent licensure process.

New Mexico has an established 3-tiered licensure system. To remain in the teaching profession, Tier I teachers must move on to a Tier II license within 5 years. However, teachers can remain at Tier II or advance to Tier III licensure after 3 years at Level II and a Master's Degree. The minimum salary is \$30,000 for Level I — Provisional Teacher, Level III, Professional Teacher's minimum is \$40,000 and Level II, Master Teacher is \$50,000. Unfortunately, the SFPS District does not determine teacher's pay scales; however, we believe that a quality profes-

sional development like a Teachers Institute will go a long way towards providing a competitive advantage to move teachers through the licensure process (and pay increases) as quickly as possible.

Fellows from the Institute will also learn invaluable techniques and strategies for keeping students and parents engaged in the learning process. While these innovations will be beneficial district wide, they will have a tremendous impact in special needs schools. To date, most of the alumni Fellows have been from the District's south side Santa Fe schools where there are typically student populations who have added barriers to learning (i.e., lower socioeconomic status and high populations of ESL learners). It is the District's responsibility to ensure that all students have an equal opportunity, regardless of external barriers to have access to quality teachers and receive a superior education.

Santa Fe is a historic and diverse community — rich in its cultural heritage and significance. The District is working to build a framework to strengthen teaching within this context, with an aim to prepare teachers to meet the challenges of today's changing classroom. In this information age, SFPS teachers need up-to-date,

(continued on page 30)

Leading the Seminar on Renewable Energy

By Gary W. Brudvig

With concerns about the impact of our current use of fossil fuels on the environment and our national energy security, renewable energy is in the news on a daily basis. Many students have seen Al Gore's movie "An Inconvenient Truth" and know that he shared the Nobel Peace Prize for 2007 with the Intergovernmental Panel on Climate Change. They may also be familiar with some of the issues relating to energy use, but most do not know much about the science that underlies renewable processes for energy production. The aim of this national seminar was to discuss the science related to current sources of energy (mostly non-renewable) and potential future sources of renewable energy.

We can learn much about sustainable energy use by studying natural processes. Nature has solved the renewable energy problem through the process of photosynthesis that is carried out by green plants. Plants are amazing chemical factories and provide a working example of renewable solar energy utilization. The conversion of solar energy into biomass by photosynthesis is the source of most of the energy available to life on Earth. This includes not only the on-going production of high-energy organic molecules by plants that supports the food chain, but also the excess production of biomass over the Earth's geologic history that has been buried in the form of coal, oil and gas. Most of our current energy comes from burning these fossil fuels. However, energy from fossil fuels is non-renewable (at least not in our non-geological timescale). We need to develop renewable sources of energy in the near future. Photosynthesis provides a successful example of how solar energy can be converted into fuel. By understanding how plants carry out the processes of solar energy utilization, we can obtain

Gary W. Brudvig is Professor of Chemistry, Molecular Biophysics and Biochemistry at Yale University.



GRANT WOOD, STONE CITY, IOWA, 1930

some answers to the question of how we can harvest solar energy by using processes of artificial photosynthesis.

My own interest in science stems from my hands-on experiences as a child. Therefore, many demonstrations were included in this seminar — at least one demonstration, and frequently two or three, in each seminar meeting. These demonstrations were chosen so that they could engage the Fellows and at the same time illustrate the scientific principles related to renewable energy. The book by David Walker entitled *Energy, Plants and Man* was used as the primary text for the seminar, and a special issue of *Scientific American* on "Energy's Future Beyond Carbon" (September 2006) served as a supplementary "text." The first week of the seminar focused on photosynthesis. The seminar began with a discussion of how plants use light to convert carbon dioxide and water into sugar and oxygen gas. This was followed by discussions on the nature of light and the fundamental

steps by which light is absorbed by plants and converted into chemical energy. Demonstrations of the colors in light by using diffraction glasses and a spectrophotometer aided these discussions. Plant pigments were discussed next, together with demonstrations on light absorption/emission by pigments extracted from plants and algae, and on pigment separation by using paper chromatography. The process of carbon fixation was discussed and was "photographically" illustrated by making starch pictures on geranium leaves (although this demonstration was not as successful as I had hoped because of an insufficient carbon dioxide supply for the leaves held between glass plates). In the second week of the seminar, we delved into various forms of energy, including wind, geothermal, solar and nuclear. Demonstrations included solar water splitting using electricity produced by a photovoltaic cell, followed by conversion of the generated hydrogen and oxygen into electricity that ran a motor by using a fuel cell, and the

When They Wonder . . .

operation of a Stirling heat engine. A highlight of the second week was our production of biodiesel fuel from cooking oil. Working with machinist David Johnson and glassblower Daryl Smith from the Yale Chemistry Department, who constructed a transparent glass apparatus, we observed the steps in the process of making biodiesel fuel, culminating with combustion of the fuel in an oil furnace burner that David set up. The seminar ended with a discussion of energy use in the future that included progress in development of systems for artificial photosynthesis.

This seminar provided me with an excellent opportunity to connect my own research on photosynthesis to the sources of energy that currently power our planet, to sources of renewable energy for the future, and to the impact of our energy use. I tried to make science the focus, although the discussions frequently involved current events and societal issues. I think that the Fellows in this seminar gained a greater understanding of the science related to energy conversion processes, especially in photosynthesis, and it was rewarding to me when they expressed their enthusiasm for the seminar. At the end of the seminar, the Fellows prepared an outstanding collection of curriculum units that include a number of excellent activities that will engage the students' interest and teach them about renewable energy.

Ekman: Small Colleges

(continued from page 5)

Yale-New Haven Teachers Institute idea to liberal arts colleges. In so doing, the successful record of small colleges both in preparing a significant number of new teachers and in deepening the knowledge and effectiveness of experienced teachers would be enhanced, and the opportunity for school teachers in communities that are not home also to a research university to have an Institute-like experience will be expanded.

By Cherisse Campbell

Editor's Note: This unit, prepared in the national seminar on "Renewable Energy" and being taught in the fall of 2007 at a vo-tech high school, is entitled "Environmentalists and Chemists Unite: A Chemistry Class for our Changing World." It addresses several standards-based curriculum components by relating them to the need for alternative energy sources. The unit's four topics are: "Atomic Inventory and Classification of Matter," "Nomenclature and Reactions," "Global Warming and Stoichiometry," and "The Energy Potential of Biodiesel." It also includes four "Sample Activities" for the students to carry out — understanding the carbon cycle, computing an automobile's production of carbon dioxide, the preparing and testing of biodiesel, and a critical reading of an article on soybeans in Paraguay.

Chemistry is beautiful, poetic, tragic and triumphant. This is how I see the subject that I teach, and my wish is for my students also to be able to experience the multiple dimensions of chemistry within the confines of our standards based curriculum. When I was given the opportunity to write a unit based on the alternative energy seminar I was excited to be presented with the time and resources necessary for developing a series of thoughtful and engaging lessons.

The unit I developed was based on tying our existing curriculum to current environmental issues that would undoubtedly grasp my students' attention long enough for me to teach them some chemistry. For example, most chemistry classes begin with a discussion of the elements. Our class was not different in content, but it was different in approach. We brought the elements to life by focusing our discussion on the elements that are central in the air, earth and in life.

Cherisse Campbell is a Science Teacher at Hodgson Vocational-Technical High School in New Castle County, Delaware.

Although most science teachers take it for granted, it is amazing to a student the first time that they realize that the "same" iron that is in the earth is the same iron that is essential for their bodies. My students began to ask "I wonder" questions such as "where did the salt in the ocean come from" or "what happens if we get too much of this element, or not enough of that element." When they begin to wonder, it is time to teach.

The students continued their investigation with a reading taken from Primo Levi's book, *The Periodic Table*. In the selected chapter, Levi traces an atom of carbon through the carbon cycle beginning as a component of limestone and chronicles its journey into the air in the form of carbon dioxide, its entry into the living world through the process of photosynthesis, continuing through the body in the form of glucose, and ultimately its return to the Earth as a result of the inevitable demise of the host. Some students struggled with the reading even though they were given pre-reading, during reading, and after reading exercises to support them through the text. However, many students got it. Boy, did they get it! One student told me that "reading this piece changed the way [he] thinks about carbon". He realized that without it, the world would not be the same and he would not be alive. These sentiments were echoed by several other students, and this sort of engagement was such a treat as a teacher (especially considering how much they grumbled while working their way through the reading). After reading Levi's piece, the students were then asked to craft a short story of their own where they chronicled the "life" of another element. The stories were amazing and ranged from tales about hydrogen's adventures starting at the Big Bang and beyond, to another story that tracked an atom of iron from the ground into its use as a nail that was ultimately responsible for the crucifixion of Jesus Christ. In this young man's story, as the iron atom sat covered in blood, it wept because

(continued on page 11)

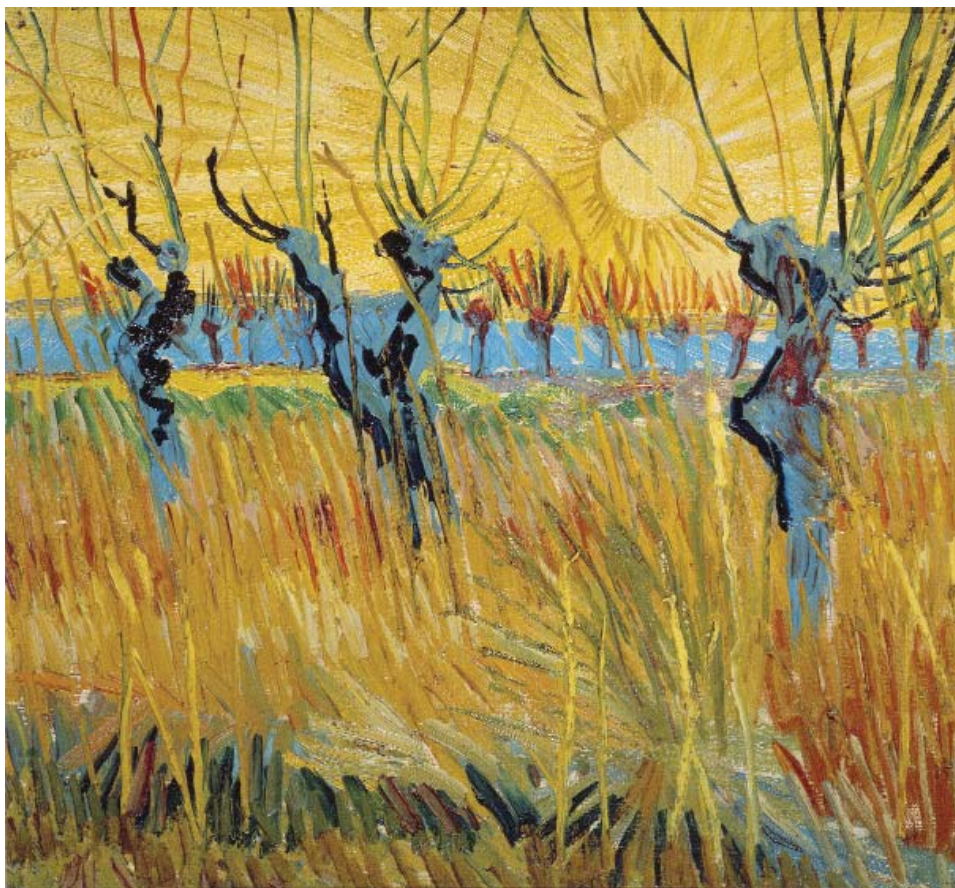
The Power of the Sun

By Katya Danielle Gothie

Editor's Note: This curriculum unit was prepared in the 2007 national seminar led by Gary Brudvig on "Renewable Energy," and is being taught during the current semester to sixth-grade students in Santa Fe. It is designed to incorporate hands-on activities that will increase their awareness of solar energy. Lessons deal with the sun's composition, its positioning in our solar system, its role as the Earth's closest star, the transformation of its energy into various forms, the current state of the Earth's climate, and the need for renewable energy. The unit may be adapted to other grade-levels and other regions of the country.

I was very excited when I was accepted for this seminar on "Renewable Energy," because during the 2006 Intensive Session of the Yale National Initiative I had attended the film *An Inconvenient Truth* with the seminar on "Global Warming." I regret that I did not learn about ecology or environmental issues until I was out of college, so I am highly motivated to teach my students about issues such as global warming and renewable energy. As I was an environmental educator prior to becoming a classroom teacher, my personal interest and professional background in environmental issues have always driven my science curriculum. Many of my science units focus on current environmental topics, which I integrate into the public school curriculum along with the National Science Standards. While I expected that the emphasis of the "Renewable Energy" seminar would be exploring alternative fuels and energy, I was surprised to learn that Professor Brudvig's research entails studying the chemistry of photosynthesis. As a result of this emphasis, I was able to create a broad unit that would ultimately cover many of the required standards for my classroom,

Katya Danielle Gothie is a Sixth-grade Teacher at Agua Fria Elementary School in Santa Fe, New Mexico.



VINCENT VAN GOGH, POLLARD WILLOWS AND SETTING SUN, 1888

by making the theme of my curriculum "The Sun."

With 300+ days of sunshine a year, it is easy to see why a teacher living and working in Santa Fe, New Mexico would want to focus on solar energy. Santa Fe has an elevation of 7,000 ft (2,132 m), making it the highest capitol in the United States. The state of New Mexico is ranked 5th in the United States for total land area, 121,665 sq. mi. (315,194 km²), providing tremendous potential for generation of solar power.

I am a sixth grade teacher at Agua Fria Elementary School in Santa Fe. The population of the school is close to 600 and hosts pre-kindergarten to sixth grade students. A majority of my students are Hispanic and are from the lower socio-economic tier. The school was built in 1936 and sits in a historic village on the west side of town. I teach all core subjects to my students. To keep their

interest I provide science activities that are relevant to their lives and provide them hands-on opportunities to investigate and explore the world that surrounds them.

I began my curriculum unit on "The Power of the Sun" three weeks into the school year with an introduction to Earth and Space Science. I first assessed my students' knowledge of the Sun by asking them to create a K-W-L chart. This is a graphic organizer that begins by finding out what the students "know", then what they "want" to learn, and finally what they "have learned" upon the completion of the lesson or unit. The students had various responses and most identified the Sun as a star. Many students were able to expand upon that definition and explain that a star was made up of gas. When discussing objects in our Solar System it is important to make analogies that allow students to

Campbell: When They Wonder

visualize the magnitude of these objects and the relative distance they are from the Earth. So we discussed the life cycle of the Sun and identified it as an average star. Then I told them how big it is, 1.4 million kilometers in diameter. Nothing registered in their minds until I said that it would take 110 Earths strung together to be as long as the diameter of the Sun. Next, we went out on the playground and lined up side-by-side and began passing the globe down the line. We continued to pass it and fall back in line until we passed it 110 times and then I said that what we had just done on a model scale was to demonstrate the diameter of the Sun. Although this was not the most scientific method with which to illustrate the model, the students were able to physically experience the distance that they had passed the globe and therefore had a much clearer sense of the diameter of the Sun. Students like to be physically involved and when dealing with abstract measurements it is important that teachers try to bring it to a concrete level.

Next we shifted our focus to the composition of the sun. We drew diagrams of both the Sun and the Earth and compared the different layers of a star and our planet. Using dry erase markers on the board we color-coded the four layers of the Earth and six layers of the Sun in order to illustrate their different chemical compositions and to demonstrate that the Sun generates heat and light energy and the Earth absorbs and radiates heat and light.

This is only the beginning of our curriculum unit; our next focus will be on how heat and light energy affects living organisms on the planet. The culminating activity for this unit will be to construct model solar cars, and the icing on the cake is that several days into this unit I received a grant from Los Alamos National Laboratory Foundation to fund materials for the construction of my students' model cars. My students reacted with a lot of enthusiasm when I was awarded the grant from the LANL Foundation. They are excited to be a part of designing their future.

(continued from page 9)

it would never be the same again. I did the same. I did not weep because of the tragic fate of the iron atom, but for what I had witnessed. My student had grown, and as a teacher I had grown.

Working through the lessons found in the unit has not only improved the climate of our classroom community, but has also increased the level of collaboration within the science department at my school. For example, I have had the opportunity to share parts of the unit with other teachers. As a part of our curriculum we teach mixture separation techniques. In my unit, I address this topic through a discussion on the various pigments responsible for the colors in leaves and how solvents can be used to separate those pigments through paper chromatography. Another teacher in my school performed this separation using leaves that are found around our school campus. He shared the resulting chromatograms with me, and how pleased his students had been with this experiment.

In the next few weeks, our class will begin the global warming component of my unit. I began mentioning this part of the unit to my students early in the semester when we were learning about isotopes and the role of carbon-14 in determining the percentage of atmospheric carbon dioxide that came from man-made sources. The discussion was very lively and the students are very excited about the topic and I anticipate reactions similar to what I have experienced in other parts of the unit.

Crafting and using this unit has allowed me to experience levels of student engagement that every teacher longs for. By tying my standards based curriculum to timely environmental topics, I have been able to increase achievement in my class as demonstrated by higher test grades and improved homework completion rates versus last year. In addition, the unit serves as a catalyst for additional collaboration within my department. I look forward to refining this unit and preparing more engaging lessons in the future.

Whitaker: Legislating, Planning, and Teaching

(continued from page 4)

experience in teaching films from Africa, China, Afghanistan, and Iran to students in a World Literature course. Though her curriculum unit focuses on the historical influence of earlier art forms on contemporary cinema, her account here emphasizes the need for students to learn to read the language of film — indeed, as a kind of visual and aural poetry. Then, in "Entering the Chinese-American Experience," Deborah Samuel from Philadelphia, who took part in the seminar on "The Supreme Court in American Political History," led by Robert A. Burt, tells how she brought the difficult history of Chinese immigration into her English class of mainly African American students in preparation for teaching *Bone* by Fae Myenne Ng and *The Joy Luck Club* by Amy Tan. We illustrate her piece with an image of one of the practices of Chinese workers — using poles to carry merchandise — against which the anti-immigrant ordinances in California were directed.

Nancy Ann Wasser, a Fellow from Santa Fe in the seminar on "Children's Literature, Infancy to Early Adolescence," led by Paul Fry, then offers in "Building Cultural Bridges through Literature" a detailed summary of how she is leading her Mexican and Hispanic students to understand and appreciate their rich literary and cultural heritage. We include with her piece an Aztec pictograph like those studied in her class. *Lienzo de Tlaxcala* focuses on Hernan Cortes and La Malinche, his Mayan translator and mistress who became "Mother of a new race." In "Things, Foods, and How We Know," Jennifer B. Esty, a Fellow from New Haven in the seminar on "Native America: Understanding the Past through Things," led by Mary Miller, reflects appreciatively on the process of that seminar and describes her own experience in leading a unit that provides a scientific introduction to nutrition in a "wellness" class for teenagers.

Finally, Cristian Antony Koshock, a Fellow from Richmond in the same seminar, describes in "Native American Traditions

(continued on page 23)

Leading the Seminar on the Craft of Word Problems

By Roger E. Howe

Symbolic notation is an important source of power for mathematics. This specialized writing system compresses large amounts of information into compact, easily manipulated form. For the knowledgeable user, this notation is a versatile problem solving tool. However, from the educational point of view, the power does not come for free: teachers must work hard to help students keep the symbolism invested with meaning. If a student cannot interpret and work with the symbols in meaningful ways, his only option is to try to manipulate them according to formal rules. Frequently the rules become too complex to cope with, and the student completely loses touch with mathematics.

Word problems can help students stay in touch. Dealing with a word problem requires translating its verbal statements into symbolic ones, manipulating the symbols to solve equations, then translating back to answer the question posed in the problem. This process requires students to assign meaning to symbols, thereby keeping students tied to mathematics. Thus, word problems should not be thought of as a separate topic in the curriculum. They have a central role to play in mathematics education. From this point of view, the avoidance of word problems so common in our math instruction is a prime symptom of the deficits of mathematics education in the U.S.

The seminar on *The Art and Craft of Word Problems* was devoted to remedying this deficit, at least in the classrooms of the seminar Fellows. Each Fellow wrote a curriculum unit centered around word problems. Word problems are not simply a prominent feature in these units, they are dealt with in a systematic way intended to give students an overall understanding of how to approach word problems in the relevant subject area. More broadly, the goal is to instill a habit of careful reading and interpretation.

Roger E. Howe is Professor of Mathematics at Yale University.



LAWRENCE WEINER, *GIVE & GET* AND *HAVE & TAKE*, 2005

George Polya, in his often-cited writings on problem solving, listed four key steps for dealing with any problem:

1. Understand the problem.
2. Make a plan.
3. Carry out the plan.
4. Look back.

Of these steps, the first is by far the most important. Students who learn to read mathematics words problems and interpret them carefully develop skills that will help them in all mathematics courses, and far beyond mathematics.

The most frequently proffered advice for understanding word problems is to learn the vocabulary. Each mathematical operation has a variety of words or phrases which invoke it; addition is suggested by "in all," "all together," "sum," "more than," "added to" and so forth. The sound advice

to know the words involved in problem statements is unfortunately often taken to extremes, resulting in the "key word" approach: decide what operation to perform by identifying a word associated to one of the operations. However, this approach has serious shortcomings. It is easy to write word problems with a phrase such as "more than," or "the sum of," but which require subtraction for their solution. There is no substitute for careful reading and understanding. Particularly with multistep problems, ability to read and understand and translate into mathematics is essential, since the proliferation of possible problem types easily outstrips efforts at classification. Unfortunately, the national aversion to word problems severely curtails the extent and variety of multistep problems our students see, thereby limiting

Exploring Word Problems with Singapore Bar Models

By Valerie Schwarz

their experience and ability in applying mathematics.

The units prepared for this seminar promote understanding word problems, not only one by one, but through comparison. Because they will see and compare a variety of problems, students will get a feel for the kinds of issues that can arise, and for some possible responses. The phrase used in the seminar for this comparative study was "exploring the problem territory." As students work on the problems assembled for these units, they should also gain some familiarity with the problem territory, and, hopefully, will feel somewhat more at home in it.

The grade levels taught by seminar Fellows ranged from primary to high school. Accordingly, their seminar units cover a range of topics. Several units at the elementary level made use of a taxonomy, developed by T. Carpenter and other mathematics educators, that distinguishes ten types of one-step addition and subtraction problems. It is desirable that students solve problems based on all ten types, in order to develop a robust sense of the meaning and applications of addition and subtraction. Yet many students are exposed to only a few of the possible types. This impoverishes their understanding of the operations, and begins a narrowing of their mathematical horizon. It limits their ability to deal with more complex word problems, since these may well incorporate an addition or subtraction scenario with which they are not familiar. The units developed by the elementary teachers in the seminar will help their students develop a broad foundation for later work.

From one-step addition and subtraction problems, the seminar units progressed through multistep problems involving any of the four basic operations, through problems involving percents and proportions, to problems involving linear equations, either one or a system of them, and reached a high point in a unit on quadratic equations. A carefully constructed set of problems can provide a rounded experience of any topic, and can even reveal aspects of a subject that might be hard to get across any other way.

Editor's Note: This curriculum unit for fourth grade, "Dr. Word Problem — Solving Word Problems with the Four Operations Using Singapore Bar Models," was written in the 2007 national seminar, "Keeping the Meaning in Mathematics: The Craft of Word Problems." The unit focuses on the four operations of arithmetic, teaching the students how to represent and solve problems by analyzing groups or "suites" of problems and learning how to represent them using Singapore bar models. This approach was chosen because Singapore leads the world in mathematics achievement, and because bar models are a visual representation of words, which may help children to translate from words to mathematical symbols. After learning the four operations and how to represent them using Singapore bar models, the students proceed to study two-step problems involving the four operations in any combination. In a culminating activity, the students put together a collection of word problems that include all four operations focused around a theme. The students will write their own word problems and also illustrate their scenarios with Singapore bar models. The teachers may find on the interactive Thinking Blocks website some helpful strategies for demonstrating to the students how to model the problems.

Participating in the Yale National Initiative has truly been a roller coaster of emotions. When I first learned that I was going to attend, I felt the endorphins rushing through my body like I just ran a personal best time in a 5K race. Wow! I was going to spend two weeks at Yale University. Then in May 2007, I spent a long weekend in New Haven and the excitement continued to grow. The camaraderie amongst the teachers was immedi-

Valerie Schwarz is a Fourth-grade Teacher at Mary Munford Elementary School in Richmond, Virginia.

ately evident. Educators from across the country mingled, discussed teaching experiences, and shared a dedication to teaching in urban school districts. During this weekend, I met the Fellows from "The Craft of Word Problems" seminar and its leader, Roger Howe. This was my first seminar experience, and it was quite different from the classes I had taken during my undergraduate and graduate courses of study. The seminar approach is a collaborative forum of teachers from various levels.

When I left New Haven in May, I knew I had to collect word problems and analyze them for similarities and differences. I had what I "thought" was a short reading list, since the math seminar certainly would not require much reading. An e-mail from the seminar leader arrived and included several books that everyone would be required to read in addition to our individual reading selections. As school was winding down for summer, I decided I better order these books and start reading. For several days, I arrived home to packages on the doorstep. Then the roller coaster suddenly approached a steep hill. Fear and panic set in for weeks as I trudged through book after book. I was reading books about math and word problems; this was not exactly a summer vacation. I was reading about the differences between math teachers in China and in the United States and examining math problems from Singapore and Russia. It was intriguing to think about how this new knowledge would soon filter into my classroom. Soon it was time to head to Yale for the two-week seminar.

My two weeks at Yale were absolutely incredible — definitely the best part of the ride. Having eleven years of teaching experience and claiming math as my favorite subject, I felt fairly confident of my skills. However, the beauty of the Yale National Initiative is that, like the National Board Certification experience, it builds confidence and challenges your abilities at the same time. My seminar leader taught the Fellows how to analyze, classify, and

(continued on page 15)

Quadratic Equations in Word Problems Students Can Relate To

By Nancy Rudolph

Editor's Note: This curriculum unit, designed for a class in a comprehensive vo-tech high school, where students are held to the same academic standards as all public school students in the state, includes a compilation of word problems about quadratic equations that will appeal to today's teenagers. It begins with a "suite" of problems in projectile motion (which will relate easily to various sports) and proceeds into a "suite" of problems in geometry. The problems are organized in order of increasing difficulty. As students progress through the problems, their quadratic-solving skills should improve and they should gain a better understanding of how each change affects the solution and/or the choice of solution method.

During my 2007 summer vacation, I was fortunate enough to participate in a national seminar on "Word Problems" at Yale University. I learned a lot about math and a lot about analyzing sets of word problems. The end product of my participation was a curriculum unit that I developed to enhance the study of quadratic equations. I teach pri-

Nancy Rudolph is a Mathematics Teacher at the Hodgson Vocational-Technical High School in New Castle County, Delaware.

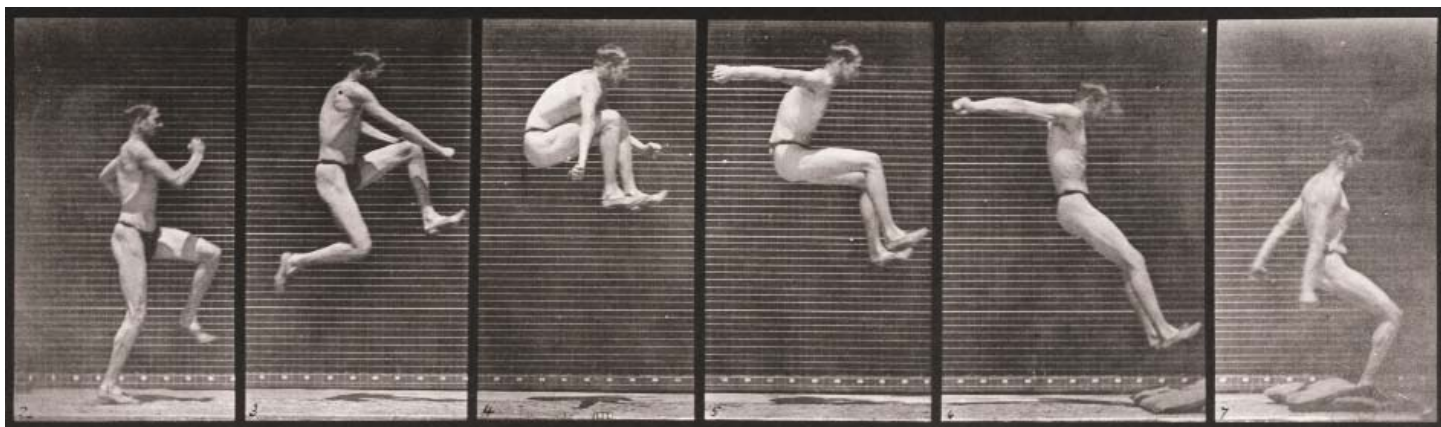
marily 10th-grade math students at a comprehensive vocational-technical high school. It is a "choice" public high school that draws students from any middle school in the county. As a result, we have students from varied backgrounds and ability levels in each class. Our math program uses an integrated approach, so that quadratic equations are studied at multiple levels. I wrote my curriculum unit with Level 3 in mind because this is the math course in which students learn algebraic methods for solving quadratic equations (remember the Quadratic Formula?).

When I was asked to write this piece about my experience teaching the unit, I hadn't taught it yet, and my students will not be mathematically prepared for the content until after the publication date. Fortunately, one of my colleagues willingly agreed to swap classes for a few days so that I could teach the first section of my unit to her class. All of her students are juniors and seniors that have completed the Level 3 math course. It is a more traditional algebra course, and, according to my colleague, they had already evaluated formulas for given values of the variables, and solved for different variables. In other words, they had the skills necessary for the lesson I planned to teach.

The first lesson in my unit is about projectile motion. I introduce the Physics equation for the height of an object at any

time being a function of its initial height, its upward velocity and the force of gravity pulling it back down. The problem set I compiled uses sports examples, exclusively. With this class, the concepts were supposed to be a review of what they learned last year. I expected them to recognize the form of a quadratic equation, the shape of the graph of the equation and its key points, namely the zeroes/roots, line of symmetry and vertex. Last year, they learned how to solve quadratic equations by factoring and by the Quadratic Formula. They also used the roots to find the coordinates of the vertex using the symmetry of quadratic functions. These concepts are part of the breakdown in the problem set I designed. However, with the time constraints I had, I opted to ask the students to use only the Quadratic Formula to solve these problems.

Well, kids will be kids, and several of them didn't work very hard because this work "didn't count." However, I was still able to learn some things that I can use when I teach the unit to my classes later in the semester. First of all, when I introduced the formula for projectile motion, $h(t) = h_0 + v_0 t + \frac{1}{2} a t^2$, I defined h_0 as the initial height of the object, v_0 as its initial upward velocity and a as the force of gravity. The value of a is 32 ft/s^2 or 9.8 m/s^2 , depending on the units used in the problem. I thought I was simplifying things by



EADWEARD MUYBRIDGE, *JUMPING, ANIMAL LOCOMOTION*, 1887

Schwarz: Exploring Word Problems with Singapore Bar Models

telling them that $\frac{1}{2}a$ would either be 16 ft/s² or 4.9m/s² when they substituted into the formula. But then I saw several students writing $\frac{1}{2}$ (16) or $\frac{1}{2}$ (4.9). From this experience, I will simply state the values of a and let the students discover for themselves that $\frac{1}{2}a$ will always simplify to 16 ft/s² or 4.9m/s². A second thing that I learned from this experiment was that the students were overwhelmed by the number of problems I handed them all at once, despite the fact that I told them up front that they would be working on them over several days. As a result, I will definitely break them up for my own classes and use ones that apply to the concepts as the concepts are taught.

An interesting fact that I observed in watching students was that they chose to find solutions using tables and/or graphs on their graphing calculators rather than apply the Quadratic Formula. They searched tables for the maximum height or the time it took for an object to return to the ground. On the positive side, they had enough understanding of the situation to find solutions. On the negative side, they were not applying, nor practicing the algebraic skills they will need if they go on in mathematics. I was able to work with some individual students to illustrate the algebraic methods for reaching the same solutions they found graphically, and I believe they benefited from the comparative methods.

Overall, the feedback I received from students that worked on the projectile motion problem set, confirmed that I had organized it in a logical manner. Several students stated that they liked the problems being related, all about sports, and based on the same formula. I look forward to fine-tuning the lesson and teaching it to my own students. I expect a higher level of motivation and success with them. In addition, they will reach the third lesson that I designed especially for them: applying the Quadratic Formula in geometric word problems related to many of the vocational areas in our school.

(continued from page 13)

group word problems. He gently guided the Fellows to develop their own deeper understanding of similarities and subtle differences between word problems. If a collection of marbles is separated, for example $5-2=3$, the unknown can be the start (5), the change (2), or the result (3). Students will have the most trouble when the start is unknown.

When I returned to Richmond and had to complete my unit, I lost some momentum, but as I am beginning to teach my unit and sharing my experience with others, I am reinvigorated for another school year. Only now am I realizing that the learning process did not end when I finished the unit. It is really just beginning.

After much research, I made many new discoveries about teaching word problems. I also became aware that some commonly taught strategies are not the best approaches to use with students. Eager to become a better teacher, I decided to explore Singapore math. Singapore is the top-ranking country in the world for math achievement. After reviewing workbooks and textbooks from Singapore, I decided to focus my unit on using Singapore bar models as a strategy for solving word problems. Since a main focus of the fourth-grade curriculum is using the four basic operations of arithmetic, this strategy could have a major impact on the learning and understanding of my students. During one seminar class, Roger Howe had me present some word problems using the Singapore bar models. One of the most eye-opening experiences was using the bar models to solve middle and high school algebra problems without writing a single equation. This discovery captured the attention of all of the Fellows in the seminar. Even though my unit is geared toward ele-

mentary students, the Fellows determined that it could be adapted and implemented in middle and high school too.

I teach fourth grade in the urban school district of Richmond, Virginia. I am fortunate to teach in a high-achieving school with a diverse population and a large inclusion program. During the first week of school, I explained to my class that I spent two weeks at Yale studying word problems. After sharing the fact, in fourth grade terminology, that Singapore is the best in the world in math, we located Singapore on the world map. As I introduced the basic concept and had the students depict simple addition sentences using strips of construction paper, I heard the students saying that what they

were doing was fun. Making early learning experiences fun is crucial. It fosters a love for learning that will serve the students well for the rest of their lives.

This strategy could have a major impact on the learning and understanding of my students

We have just started to move into more challenging addition and subtraction problems. Already I have noticed the students having the most success are my visual learners. One of the greatest challenges I did not anticipate is the fact that the students are having a tough time drawing the horizontal brackets. I will have to address this issue as we continue to work with Singapore bar models. As this unit progresses, I am sure that changes will be made, since that is the nature of teaching.

My two-week seminar with Roger Howe, my seminar group, and everyone involved with the Yale National Initiative was without a doubt an extremely rewarding learning experience. If reading four math books and writing a 25-page research-based unit was so rewarding, I can't wait for this roller coaster to creep over the top of the hill and plunge into the actual teaching of the unit. The best part of the ride is yet to come.

Voices from the Annual Conference

Editor's Note: These statements are excerpted from reports to the Conference by representatives from Break-Out Sessions.

KARLENE E. MCGOWAN: We talked in our meeting about how to get these units in front of and in the hands of teachers. We talked about the Web site and how the Yale National Initiative Web site has the units that we have done for National, as well as links to the other four League Teachers Institutes. If you're looking for a unit on a topic such as poetry or genetics or Shakespeare or sports — you can do a search on the Web site for those specific words instead of having to go through each of the seminar titles and then say, "Okay, what is this? Is this interesting?" We talked about getting the link to the Yale National Initiative, as well as for the four local Institutes, getting a link on the district Web site that would take you straight to the Initiative Web site. With districts the size of Houston, where we have 290 schools, we don't always have representatives in each school to talk about the Institute, so it would be helpful to get a link onto the district Web site so that you can go directly into the Institute Web site.

The whole purpose of our writing these curriculum units is to enhance our own teaching and that of other teachers. We all can look at a textbook, or at model lessons, but it's something different to look at a unit that has been written by a colleague, a

Karlene E. McGowan is a Reading Teacher at the Pershing Middle School, Houston; Peter Conn is Professor of English at the University of Pennsylvania; Karen S. Goldman is Associate Professor of Spanish and Cultural Studies at Chatham University; Thomas R. Whitaker is Professor Emeritus of English and Theater Studies at Yale University; Cathy Hammond is Executive Director of Professional Development at the Charlotte-Mecklenburg Schools; Leslie Carpenter is Superintendent of the Santa Fe Public Schools; and Tony J. Marchio is Superintendent of the Appoquinimink School District.

teacher who's in the same boat as you are with overcrowded classrooms, low-level students, all these things that we all deal with. We also talked about the reports and evaluations that are on the Web site. These reports tell us, look how much better these teachers are, look how much better these students are learning. These curriculum units work. They're aligned to the standards, they're not written for the standards, but they're aligned to them, because good teaching always does that anyway. You can teach anything and still be aligned with what you're supposed to be teaching, and that's what good teachers do.

PETER CONN: In our meeting we talked about how to interface effectively, or at least as non-adversarially as possible with standards and exams and testing and No Child Left Behind. That is to say, the world that provides the context today for lots of public education, which is one that is increasingly driven by pre-set curriculum and testing and so forth. This part of our conversation alternated between anxiety and enthusiasm. The anxiety was brought about by the fact that many teachers do find it to be something of a struggle to operate as effectively as they would like to, within what are sometimes fairly lockstep regimes. My own view is that it's worth some serious thought on the part of the National Institute leadership about the changes that have affected public education in the thirty years that the Institute has been in business. Stated summarily, I would say that the Institute's core assumption is that teachers are the key. And that doing everything you can to enable teachers, to enhance their experience, to treat them as professionals, to rely on their commitment and idealism and imagination is what American education depends on. The regime of standards and testing is doing everything it can to make education teacher-proof. And it seems to me, therefore, to be fundamentally, in some ways, almost at variance with what we in this room, I believe, are all up to.

Our enthusiasm, on the other side of our anxiety, is when we simply compare experiences as instructors and as teacher participants in the seminars. I've only done one, but others in the room have done many, Karen Goldman's done five or six, I think, Paul Fry from Yale has done quite a few both nationally and locally. And that experience has proven for many of us, on all sides of the table, to have been memorable and, in my own case at least, probably transformative. So we were grateful, all of us, for that opportunity, and many of us look forward to doing it again.

KAREN S. GOLDMAN: I want to add one more comment. When Peter spoke about the current climate of public education and policy, and its relations to the Institute assumptions, I threw out the question, because it's my nature to be contrary and provocative, whether or not that would signal to us that maybe we need to look at the policies and procedures of the Institute and say, "Hey, is it time to re-think this in light of the current climate?" And I think you'll be happy to know that there was a resounding negative on that. That what needs to change is not the policies and procedures of the Institute, but rather the current climate in education.

THOMAS R. WHITAKER: We also talked at length about the desired harmony between the objective testing demanded of us by the surrounding society and the kinds of creative learning that may be central to a Teachers Institute. Our anxiety seems to result from the seeming dissonances between the central thrust of a Teachers Institute and the demands of objective testing. Yesterday, Leslie Carpenter said memorably that teaching is a transformational initiative. But is teaching to the test a transformational initiative? Not usually. At the heart of a Teachers Institute, I suspect, is a process of awakening to a potential creativity, a readiness to look freshly at the data, a willingness to risk an independent exploration. The educational philosopher,

John Dewey, anticipated Leslie's formulation by saying that "genuine learning is a reconstruction of experience." Such reconstruction asks us to look hard at who we are, what we have become, and imagine the possibility of change. It also asks, as Ray Theilacker of New Castle County was implying yesterday in his remarks, that we understand the powers of metaphor, dialogue, and even playfulness as primary agents through which we discover and shape our worlds and our lives. The best curriculum units that I have read, and I've read a good many of them, are grounded in that process for the teacher, and for the student. From that vantage point, the quantitative data that we may have to provide as authentication of what we are doing may come to seem just the desirable side effects of a more complex and profound process of learning.

CATHY HAMMOND: We believe in collaborative, collegial, and self-directed professional development for our teachers. And we believe that professional development should deepen their understanding of their content and also fuel their passion for teaching all of the children that they come in contact with, while we are attempting to build capacity for teacher leaders and we also want to promote aspiring leaders. Being in an urban district - each year it becomes more challenging to keep quality teachers, to find them, and also to keep quality administrators in our schools. That is why our district has been participating in the Initiative for three years. We've had teacher participants, and principal participants, and both the Teacher Director and the Associate Superintendent participate. This is my first opportunity to participate and I'm really excited, because as a district we believe that the Yale National Initiative does support what we want to do in professional development for our teachers.

LESLIE CARPENTER: We all need to be involved and interested in transformational initiatives. And as superintendent you

must be investing in transformational initiatives. So I have to be very careful about what I can invest my time and energy in. This is one of those very, very compelling transformational initiatives. And I believe that relationships are central to all learning and to all teaching. So when we have an initiative where teachers learn to be better teachers, and where they are, in fact, leading this initiative, then we have a very viable program.

In Santa Fe Public Schools we have two items in our Strategic Plan and two only, because I think we can get too complicated. They are to focus on teaching and learning and to streamline operations in support of teaching and learning. What that means is, my job as the Superintendent is to remove obstacles so that teachers can do a good job. And to honor the excellent teachers and to know the difference. You know when I was a teacher, we used to have "professional development" and they just brought in consultants, I'd always call them "insultants." Because they did not honor teachers for what they know and what they can do. As someone else has said, isn't "professional development" about getting everybody to the auditorium and telling everybody the same thing? I think the Institute is contrary to that model and it is a refreshing contrariness.

I believe there is absolutely no conflict between these kinds of teacher-developed units and any kind of standards-based commitment. I believe that the entire notion of developing teachers through this type of seminar approach is trusting teachers to be professionals and to understand that they're going to teach the standard-based curriculum.

In Santa Fe, we have common commitments, and that is, every teacher is teaching to the standards, and "standards" does not mean standardization, far from it. "Standards" is just another word for agreements. This is what we have agreed to teach. And so we have to be careful that we don't think of them as very restricting and very standardizing. In our school district,

in addition to that particular commitment, we also have commitments to teach a balanced literacy program, to teach a balanced math program, and that every teacher is a writing teacher. So I think that you can see that most of the units that would be developed would fit within that larger set of commitments.

TONY J. MARCHIO: I would like to just relay four observations. One, the teachers are very excited and I know teachers aren't easily fooled. When I see teachers excited, I know that when they go back to their buildings that that will be contagious and it will result in gains in student achievement. So I feel the need to promote this just from the reaction I've seen from the teachers. Secondly, we do a lot of work with our teachers, a lot of staff development, but very seldom do we deal with real content. So here's an opportunity to add depth to our curriculum. So many times we're criticized that our curriculum is so broad that it's almost meaningless, so adding some depth is a tremendous opportunity for us here. Third, about the discussion as to whether it fits the standards or not, or how does it work in with state testing — well, I would just say to everyone, just let it go. If we dwell on content, we have to have enough faith in our teachers to make that work. So when I hear that discussion I'm going to think of Carrie Underwood singing, "Jesus, take the wheel." And so, teachers take the wheel. You'll work it in and make it work and so I believe that. And the last thing that I would like to say is that, as a superintendent it is our responsibility to lead change. We talked here about transformational change; in our district we've talked about second-order change. First-order change, which we're usually involved with, is just rearranging the chairs on the deck of the Titanic. But real, meaningful second-order change is something that has a profound impact on teaching and learning. I see this as second-order — so I have a responsibility to be a leader in that effort.

Leading the Seminar on Latino Cultures and Communities

By Stephen J. Pitti

As migrations have remade the modern world, schools and their surrounding communities in the United States have been challenged and enriched by various processes of "Latinization." These have included, of course, the arrival of large numbers of immigrants into newly-heterogeneous classrooms, pressing demands for English as a Second Language teachers, and cross-national friendships forged between young people who hail from countries throughout the hemisphere. These changes have shaped the lives of many of us. As residents of the United States, young and old, we commonly listen to music rooted in Latin American traditions, we watch films and prime-time comedies featuring Latino artists, and we cheer for Major League athletes who began their sporting careers abroad. We participate in political debates that rage over immigration reform proposals, we discuss the building of new walls at the Mexican border, we read stories about the roundups of non-citizens in urban and rural America, and we watch immigrants taking new roles as voters and members of emerging social movements.

The National Fellows who enrolled in the 2007 seminar "Latino Cultures and Communities" spent a great deal of time discussing these trends, and others. To learn more about the U.S. and Latin America, both today and in the past, participants explored many connections between the United States and points south since the mid-nineteenth century. We did historical readings related to immigration, including Juan González's accessible and comprehensive *Harvest of Empire*, which proved to be a favorite of many of the Fellows. We read memoirs to understand how Latino kids have seen the U.S. educational system, and we discussed how Puerto Rican teachers and other educators have responded to Spanish-speaking students — in mid-twentieth century New York City and in the con-

Stephen J. Pitti is Professor of History and of American Studies at Yale University.



EDWARD GONZALES, SONGS FOR OUR CHILDREN, 2002

temporary South. We also spent a great deal of time examining films, paintings, poems, and short stories that explore Latino experiences and perspectives. Robert Young's *Alambrista*, the movie about Mexican immigrants in the 1970s, guided our conversations about the causes, the challenges, and the human costs of immigration. Fellows read or reread Sandra Cisneros's *House on Mango Street*, and they shared different perspectives on ways that book might be taught to different student groups. The walls of our classroom vibrated nearly every day: We listened to Nuyorican salsa, Caribbean mambos, and Mexican American corridos, and we read about the changing "soundtrack" of Latino communities from coast-to-coast. We gave some thought to artistic movements, to the paintings by Chicanas and Chicanos from the 1960s forward, as well as to the comics and graphic novels written for teenagers and adults, most notably those by Southern California's Jaime and Gilbert Hernández.

The seminar concluded by looking closely at the experiences of Central American migrants who have arrived in the U.S. since the 1980s, and by exploring recent political proposals in the United States regarding new guest worker programs, border enforcement efforts, and a Dream Act for undocumented high school graduates.

Fellows brought their own, diverse classroom experiences into seminar discussions, and they spoke with great honesty about the challenges and trends they have witnessed in their communities. Some had taught in Latino-majority schools, while others had never instructed a single Latino student, but each Fellow developed a unit distinguished by its approach to curricular standards, and driven by the particular needs of her or his local classroom. Their work impressed me deeply, and I eagerly awaited the fall 2007 Conference of the National Initiative in which I would learn something more about the seminar's results. At that October
(continued on page 21)

Examining Mexican Immigration through First-Person Points of View

By Nicole Marie Schubert

Editor's Note: This curriculum unit, prepared for an eighth-grade language arts class, is intended to lead students to understand a culture that has become increasingly important in Charlotte, NC. It uses a wide variety of materials — articles, personal narratives, poems, political cartoons, and a docu-drama film — to introduce students to first-person accounts of Mexican immigration and help them shape their own individual views of this historical process. The article reports on discoveries made during the first few weeks of teaching the unit in the fall semester. The unit is being taught in Standard Plus and Honors classes. It has all the signs of an interdisciplinary adventure but adheres to the North Carolina Standard Course of Study and meets objectives in five of the six Competency Goals.

When I first learned of the Yale National Initiative during the fall of 2006, I had no idea that nearly one year later my previously dry unit on non-fiction texts would be invigorated and renewed with endless choices of Chicano literature and research — made possible by my experience at Yale this summer. My interest in the "Latino Cultures and Communities" seminar led by Stephen Pitti this summer was immediate; the topic piqued my interest in several ways. Throughout the past decade Charlotte has seen a tremendous growth in the Latino population, so learning about the history of Latinos in the United States seemed essential. Teaching in the Charlotte-Mecklenburg School District for the past five years, I have observed many negative attitudes towards Latino immigrants, specifically Mexicans, among my students. I saw this seminar as an opportunity to develop a unit that could help dispel those stereotypes. My experience during

Nicole Marie Schubert is an English Teacher at Northwest School of the Arts in Charlotte, North Carolina.

the two-week YNI Intensive Session was by far the most effective, appreciated, and humbling professional development I have ever attended. Our seminar took us on an emotional journey through history as we explored Chicano identity, the human rights of immigrants, as well as our own self-identity and teaching experiences.

Initially, I had planned on teaching my unit for about four to five weeks (about half of the first quarter), but as the unit began to unfold I realized that in order to fulfill all of my objectives in this unit, I needed to extend the unit through the entire nine weeks of the first quarter. Since school started the last week of August, this article reflects the first three weeks of the unit. Therefore, I can only speak of what has worked well so far and the obstacles I fear will arise in the next few weeks.

During the first few weeks of the unit my students studied several types of non-fiction texts: news article, editorial, political cartoon, graphic aids (pie chart, table, map, timeline), and three feature stories. I began the unit by first teaching the components of the news article, editorial and political cartoon. The warm-up activity for this lesson was a journal question: What is the purpose of a fence? When is a fence good or bad?

Since all of the texts focused on the topic of the 700-mile fence being built on the U.S./Mexico border, students were able to correlate their warm-up responses to their analysis of Secure Fence Act 2006. These texts created controversy in the classroom while students debated how the U.S. should tackle illegal immigration from Mexico. Next, I showed the film *Alambrista*, a docu-drama that beautifully captures the conflicts so many Mexican immigrants face — on both sides of the border. Students were able to see the extreme poverty plaguing so many immigrants and could better understand why so many people illegally cross the border to work in the U.S. As the unit progresses, students will compare and contrast the main character of the film to news stories about other Mexican immigrants.

My classes also read a series of feature stories, highlighting the lives of three sisters originally from Monterrey, Mexico. Each sister's story is representative of the many conflicts faced by both legal and illegal Mexican immigrants: fear of being caught, social acceptance, assimilation, family resentment, low incomes, identity, and longing for family on either side of the

(continued on page 21)



CHRISTO AND JEANNE-CLAUDE, *RUNNING FENCE*, SONOMA AND MARIN COUNTIES, CALIFORNIA, 1972-76

Teaching an African American Class about Latin American Culture

By Samuel A. Reed, III

Editor's Note: This curriculum unit, entitled "Boricua Morena: Latin-Caribbean American and African American Cultural Connections En Ciudad de Filadelfia," was written in a 2007 national seminar led by Stephen Pitti on "Latino Cultures and Communities." The unit draws upon social studies, performing arts and literature to show the interconnections between Latino and African American cultures. It is intended for middle-grade students (grades 6th-8th) at a predominantly African-American school. It involves an inquiry through which students may learn about Latino culture while also learning about themselves. The students will explore and analyze popular Latin-Caribbean dance movements, music, poetry, and historical and current events to appreciate what Puerto Rican, Dominican, and African American cultures have in common. There will be a pen-pal exchange program with sixth- and seventh-grade students in a predominantly Latino school. And students will present multi-media renditions of what they have learned about the connections between Latin-Caribbean and African American cultures.

Why teach a predominantly African American class about Latin American culture? My school, like many schools in Philadelphia, is racially isolated. Consequently, tensions exist about meeting the school districts' expectation of promoting multi-cultural studies. Participating in Stephen Pitti's seminar "Latino Cultures and Communities," provided me the luxury of exploring the connections between Latin American and African American cultures. When planning my curriculum unit, I wanted to avoid superficial investigation of culture. Instead, I strived to make deeper inquiries about the role language,

Samuel A. Reed, III is an English and Social Studies Teacher at D. Beeber Middle School in Philadelphia, Pennsylvania.



JACOB LAWRENCE, STUDENTS WITH BOOKS, 1966

migration, and arts play in shaping both cultures.

I teach 6th-grade literacy and social studies at Beeber Middle School, located in the School District of Philadelphia. Beeber's student population is approximately 600. Most of the students come from working class families and over 70% of the student body qualifies for free or subsidized lunch. The student body is 95% African American and less than 1% percent is Caucasian. In contrast to Beeber's student population, the school district's Central East Region reports a 72% Latino and 16% African American student body. However, Beeber does have an emerging immigrant population of Latino, Caribbean and African students, and a growing number of Dominican and Puerto Rican corner stores have replaced Asian shop owners in the surrounding community. My curriculum unit was developed to allow exploration of cultural connections shared with neighboring Latin-Caribbean students in our district.

After completing my seminar, I returned to Philadelphia excited about the prospects of teaching this unit. I contacted several Latin community arts organiza-

tions, about serving as collaborators and resources. I met with the teacher from the Hon. Luís Muñoz Marín School, a predominately Latino school, who will be involved in a pen-pal exchange program with my students. Additionally, I presented my curriculum and lesson plans to teachers at the Philadelphia Writing Project's summer institute and for a new Teach for America cohort. The response I received from teachers and Latin arts organizations validated my curriculum. My topic draws upon social studies content, music, dance, film, and literature to show the interactions between Latino and African American culture. Through their inquiry my students will particularly appreciate what Puerto Rican, Dominican and African American cultures have in common.

My unit coincided with the celebration of Hispanic Heritage in Philadelphia (September 15 – October 15). When I informed my students that for social studies we would explore Latino culture to learn more about our own culture, I could feel their excitement. To start our inquiry process, my students and I completed a K-W-L graphic organizer to elicit, first stu-

dents' prior knowledge and illustrate what they knew about Puerto Rican and Dominican Culture (K), then, what new things they wanted to learn (W), and after completing the inquiry process students will describe what they have learned (L). Many of the students offered that they knew some base-line facts about Puerto Ricans and Dominicans, sharing they had their own flags, they enjoyed baseball and soccer, and they owned shops in their neighborhoods. While eliciting students' contributions for our K-W-L chart, I had to ask clarifying questions. On the issue of language, *Jessica* (pseudo-name) stated, "They talk different." Instead of moving to the next student, I asked *Jessica* clarifying questions. I asked her "what do you mean by they talk different?" She replied, "They talk fast." I noted to *Jessica* that we have lots of student in our class that talk fast, "do Puerto Ricans or Dominicans speak the same as students in this class who talk fast?" Other students were anxious, and wanted to clarify what *Jessica* meant by "they talk different". After some prodding by her classmates and me, *Jessica* finally clarified what she meant by saying "they speak different." *Jessica* simply said that "Puerto Rican and Dominicans speak Spanish." After exhausting our discourse about language, *Timothy* (pseudo-name) eagerly raised his hands to offer what he already knew about Puerto Ricans and Dominican cultures. *Timothy* said, "They face boundaries." I found his contribution very provocative. While asking *Timothy* clarifying questions, he had a difficult time articulating actually what he meant by "boundaries." He describes some aspect of physical boundaries and social barriers. However, we eventually came to the conclusion that boundaries and discrimination were related experiences of Puerto Ricans and Dominicans as well as African Americans.

I believe had I not attended the Yale National Initiative seminar on Latino Cultures and Communities I would not have been able to probe for the right clari-

fying questions and gather such rich contributions from my sixth-grade students. By using a K-W-L chart my students are well on the way to addressing my curriculum unit's essential question: "What cultural connections do Puerto Ricans and Dominicans have with African Americans?" I am anticipating the discoveries my students will uncover through the unit's plans of using pen-pal letters, and a first-person narrative research project. Through their discoveries, my students will explore the aesthetics of dance, music, film, poetry and understand how culture connects Latin-Caribbean Americans and African Americans. Ultimately my students should uncover that many Latinos responses to racism, poverty, and other social issues are very similar to the African American experience *en ciudad de Filadelfia*.

Pitti: Latino Cultures and Communities

(continued from page 18)

gathering, each participant reported that their Intensive Session work had in fact paid real benefits. Most of the Fellows had already taught portions of the units they had designed, and they provided detailed and enthusiastic updates about student interest and enthusiasm. Those who had not yet begun their units made clear that their summer 2007 work had instead led to surprising new conversations about teaching with colleagues and administrators back home, new ways of seeing their students and communities, and fresh ideas for additional units that might better engage local kids. Thanks to the energy and wisdom of these teachers from New Haven, Charlotte, Philadelphia, New Castle County, Richmond, Houston, and Santa Fe, "Latino Cultures and Communities" exceeded my wildest expectations as a seminar leader, making the summer 2007 Session one of the highlights of my professional career.

Schubert: Examining Mexican Immigration

(continued from page 19)

border. I wanted my students to learn about the struggles both legal and illegal immigrant families face when moving to the U.S. What are their internal and external conflicts? Describe the fear illegal immigrants live with. Should they assimilate to the U.S. culture? Why or why not? The students were really engaged in the feature stories because they read like chapters in a book. The culminating activity for this half of the unit will be an essay in which they describe the internal and external conflicts of a Mexican immigrant, legal or illegal, by citing examples from the film and texts studied.

Now for the obstacles (or learning experiences). While writing my unit my seminar leader had one question that remained constant throughout the revision process. Will you really have time to cover all of this information in the time you have allotted yourself? In the excitement of the very Intensive Session, I honestly believed the answer was yes — very detailed activities were my evidence. Clearly my assumption was incorrect and I have realized there is no way I can cover all of the research I wanted to include in my unit. As a result, I have created small group projects for my students. Each group will be assigned topics to research: Bracero Program, Operation Wetback, Operation Gatekeeper, Manifest Destiny, The Dream Act. Students will use the Internet to complete pamphlets on their topic. Next, they will form small groups and use their pamphlet to teach each other about their topic.

The changes in my class this year, though small, are remarkable. While I read an article aloud I paused at the Spanish words and allowed my Spanish-speaking students to read them — making read-alouds interactive. The Spanish-speakers know they are an important asset to the class. Attending this seminar and teaching this unit enabled me to foster a stronger classroom connection with my Latino students; the Latino population in my classes this year is the highest in five years.

Reading Images in Historical Context

By Sara E. Thomas

Editor's Note: This unit, entitled "Context Clues: The Appropriation of Malinche and the Virgin of Guadalupe," was prepared in Stephen Pitti's seminar in 2007 on "Latino Cultures and Communities." It introduces high school art students to the process of interpreting images in their artistic and historical contexts. The unit constitutes the final project for an Introduction to Art course for ninth- and tenth-grade students. Many of these students have difficulty with reading and can benefit from a study of reading and writing across the disciplines within the art curriculum. The approach here therefore uses art analysis followed by art creation. Students will analyze images of the Virgin of Guadalupe, supporting their interpretation with information from the artworks. They will then view images of Malinche and focus on the understanding of context. These two Mexican icons were selected in order to ensure that the student population, which is one-third Latino, one-third African American, and one-third white, becomes acquainted with artwork by each group.

My students look at artwork with blinders on — How does this piece of artwork affect me? While they are wonderful at making art-to-self connections, oftentimes their interpretation of a piece may be incorrect or incomplete because they are unaware of the context in which the artwork was created. They do not take into account the experiences of the artist or the events that were taking place while the artist was creating the artwork. I strive to teach my students that understand-

Sara E. Thomas is an Art Teacher at the High School in the Community in New Haven, Connecticut.

ing context is extremely important when interpreting an image. The unit I wrote during Professor Pitti's 2007 seminar, entitled "Context Clues: The Appropriation of Malinche and the Virgin of Guadalupe," addresses exactly this need. It also provides me enough expertise to discuss



YOLANDA LOPEZ, PORTRAIT OF THE ARTIST AS THE VIRGIN OF GUADALUPE, 1978

images by Latino artists that I was not familiar with before the seminar. This gives my students more exposure to a variety of different artists. I wrote this unit initially for my ninth- and tenth-grade Introduction to Art class, but decided to try it out in this fall with my Advanced Placement class.

I began by showing my students the traditional image of the Virgin of Guadalupe. We discussed whether or not they recognized her, and to my pleasure most of the students had seen a replica of her some-

where before. When I asked "Where?" they most commonly answered "at school," "at church," "at home," and even "as a tattoo." We discussed whether or not the image was an icon, and what defines an icon. Our class definition of an icon was "an image that is easily identifiable to a vast majority of the population." We discussed how there are national and international icons. Once students had tied the image to their prior knowledge, I told them the story of Juan Diego and how the original image on the cloak came to exist.

Next, I had the students describe the image. They began to become very invested in the image, picking up on a variety of details that piqued their curiosity. They began to ask me questions about the image. This is where the first extremely powerful part of working with this image occurred. Students began to do exactly what I wanted, with very little prompting from me! By the end of class we had a list of questions about the image on the board ranging from "Why is she white?" to "What is she holding?" Once students had posed all of the questions they had about the image, we went to the library to find the answers to their questions. Students were researching the context of the image all on their own! They were no longer assuming that they knew everything about the image and were finally taking an interest in what other influences there may have been in creating this artwork. Students found resources easily and began to make connections between the symbols from both the Aztec culture and the Catholic church. Students even taught me about the image — that the stars on her cloak had been identified as specific constellations, that the black sash around her waist symbolized pregnancy in Catholic imagery, but also would have been worn by

Whitaker: Legislating, Planning, and Teaching

Aztec warriors getting ready for battle. I have never experienced students becoming so invested in an image on their own, and I think actually being able to pose their own questions and then research the answers was an extremely powerful process for both them and me.

After coming back together as a group to share their research, students were broken into small groups and each group was given a different representation of the Virgin of Guadalupe to compare with the original. The images were more modern appropriations of the Virgin of Guadalupe by Alma Lopez, Ester Hernandez and Yolanda Lopez. Each group discussed the similarities and differences between their appropriation and the original image. Students again asked questions about the new image they had received and again did research. This process was a bit more difficult since the images are recent, so there is less written about them. Students then shared in groups what they had learned about their image and we discussed the idea of appropriation. We discussed how using someone else's image is legal so long as you change it, or alter it somehow to become your own.

We then looked at an image by Alacarez of the Statue of Liberty holding a microphone and a tape recorder. We brainstormed together about what the statue of liberty symbolizes, and then how this depiction by Alacarez changes her as a symbol entirely. This was the second powerful part of this unit. After showing students this example they brainstormed symbols that they would be interested in appropriating. Every student immediately had two or three phenomenal ideas. I have struggled with how to teach conceptual art to students since

I started teaching and simply by modeling this process students did it without my even having to explain it. Each student discussed their ideas with me and then chose one of their ideas as a concept for their art piece. Students' ideas ranged from the controversy over Slayer lyrics being on trial for alleged-



JOSÉ DE RIBERA Y ARGOMANIS, VIRGEN DE GUADALUPE, 1778

ly causing fans to commit violent acts, to the idea that anything is beautiful by modernizing Marilyn Monroe.

This unit has exceeded my expectations in teaching students to learn about the context of an image by turning them into researchers and getting them invested in artwork. It has also taught them to create conceptual artwork, which is a wonderful added surprise. I look forward to seeing the results this unit has with my Introduction to Art students this spring.

(continued from page 11)

and Identity in the Art Room" how he has been leading young African Americans through work with masks and other images of identity toward an understanding both of the Native American tradition and of themselves. Here we include Thomas Eakins' portrait of Frank Hamilton Cushing, which offers a remarkable historical analogy to the process that is central to Koshock's classroom strategy: the discovery or creation of a personal identity through the exploration of a partly alien tradition. Cushing, an anthropologist and collector of European descent, is here portrayed in the garb — and with the gear — of the Native American culture in which he sought to immerse himself. Indeed, Cushing was himself accepted into the Zuñi community.

On our back cover, answering Samuel Morse's painting of the House of Representatives, is another important national image: *The Capitol in Washington* by Currier and Ives. This well-known company, headed by Nathaniel Currier and James Merritt Ives, specialized in publishing hand colored lithographic prints that were sold inexpensively to the growing American middle class. They became extraordinarily popular illustrators of our national life.

And for the Yale National Initiative what is on the horizon? We look forward with hope for Congressional action on the bills introduced by Senators Lieberman and Dodd and Representatives DeLauro and Courtney. Indeed, we urge our readers to support the Teachers Institutes Act — and you may learn how to do so by logging in at <http://teachers.yale.edu/legislation>. We also expect to hear more in the near future from other cities that participated in the Yale National Initiative during 2007. Atlanta and Richmond are considering a Teachers Institute; Chicago is exploring a Teachers Institute; and in October representatives of the San Francisco Unified School District came for the first time to take part in a national meeting.

Learning to Read Foreign Films

By Laura Viviana Zoladz

Editor's Note: The curriculum unit described here, entitled "Back to the Future: How Earlier Art Forms Have Influenced Contemporary Cinema in Ireland, Iran, and Africa," aims to teach students about different cultures through cinema and about a particular region's cinema through its culture. Along the way students will learn about general film-making techniques and be able to identify them in the films they view. They will compare and contrast thematic and technical elements in films from different cultures. Most importantly, they will be able to demonstrate the relations between the artistic heritage of each culture studied and its contemporary cinema. The curriculum unit is intended for a ninth-grade "heterogeneous" English class, containing students of all academic levels from "special needs" through "advanced."

This past school year, thanks to Dudley Andrew's 2006 seminar, "Stories Around the World Through Film," I introduced my Senior World Literature students to international cinema. It wasn't the first time I had tried to expose students to foreign films, but it was the first time I felt these lessons were truly successful. While writing the curriculum unit, I thought long and hard about how to prepare students for watching films that were so different from what they customarily consumed at the local multiplex or in their living rooms. I decided it was a matter of communicating to the students, in advance of viewing, some of what they should and should not expect from these films, and then charging the students with looking for other ways the foreign films differed from the big-budget Hollywood films they normally watch for entertainment. This gave reluctant students something to focus on other than the fact that

Laura Viviana Zoladz is an English Teacher at Paul M. Hodgson Vocational-Technical High School in Newark, Delaware.

they were forced to read subtitles instead of relying on flashy special effects and non-stop action to follow the story line. It also reinforced the idea that these films do not follow the same conventions as the films the students are accustomed to, but that if viewed with a different set of expectations and an open mind, they can be rewarding and entertaining all the same.

By the end of the course, my class had watched movies from Africa, China, Afghanistan, and Iran. They saw what some of the people, villages, and towns in these countries looked like, they got a feel for the natural landscapes, and they heard French, Jula, Mandarin, Pashtu, and Farsi spoken by native speakers. They were also exposed to at least two distinct styles of filmmaking, one an extension of the oral tradition, and the other a cinematographic extension of the lyric poem blended with more familiar narrative conventions. The sounds and images of these films enhanced the students' enjoyment and understanding of the related literature: *Sundjata*, an epic of Old Mali; *Things Fall Apart*, by Nigerian author Chinua Achebe; *The Kite Runner*, by Afghan Khaled Hosseini; and ancient Chinese and modern Persian poetry by some of these countries' most beloved and respected poets.

A significant number of students asked me where they could find more movies like the ones we watched in class. They said they were unable to locate them at their usual video stores. In their end-of-year course assessments, several other students said the movies were their favorite part of the class and they hoped to continue watching foreign films "on their own time." I took these comments as signs of success, but reading their film analyses proved even more rewarding.

After we watched Iranian director Majid Majidi's *The Color of Paradise*, students wrote about the ways in which the film could be read as a visual and aural poem, giving examples of repetition, sensory images, and symbolism and explaining the role these poetic elements play in illumi-

nating different aspects of the characters and the narrative. One said, "The director of this film was making an attempt to capture the amazing sights and sounds of Mohammed's world by exploiting and exaggerating them. Every leaf, animal, tree, and river flickered with detail and beauty. . . [The director] was allowing the viewer to realize how the privilege of sight is unappreciated by everyday people." Another student said:

Mohammed's loss of sight strengthened his other senses. In one of the first scenes, Mohammed hears a bird in distress and searches on his hands and knees until he finds the fledgling. He then climbs a tree with the bird safely tucked into his pocket, feeling every branch with his fingers until he reaches the nest. This shows how keen his senses are, but also how caring he is. In one of the final scenes, we see a turtle caught upside down between two tree stumps. This symbol foreshadows that something bad is going to happen: a bridge collapses while Mohammed and his father are crossing and [the boy] is swept away by the river. But at the conclusion, we see a bird fly overhead, and like the saved baby bird in the beginning of the movie, this bird is a symbol of life and hope, so we know Mohammed will live.

A third student commented on a different kind of imagery. "The repetition of the father's reflection in the window, and later in the mirror," she said, "is a sign that at some point he will have to look into his soul or inner self. The repeated imagery of the long hallway with all the bunk beds expresses emptiness or loneliness, whereas the lush, green pathways represent freedom and openness to new experiences." And a fourth student focused on tactile imagery and the theme of blindness. "In the movie," she said, "Mohammed was blind, so he had to use his fingers to see. When he had souvenirs, he determined who got which by his touch, and when he worked as a

(continued on page 27)

Entering the Chinese-American Experience

By Deborah Samuel

Editor's Note: This curriculum unit, developed in the 2006 seminar led by Robert A. Burt on "The Supreme Court in American Political History," is entitled "Chinese Immigration, Exclusion and the Chinese-American Experience." It is designed for high-school English students who are predominantly African American. Knowledge of the history of discrimination against the Chinese and changes resulting from Supreme Court decisions serve as a basis for understanding two novels: Bone by Fae Myenne Ng, and The Joy Luck Club by Amy Tan.

When the opportunity to participate in the Yale National Initiative presented itself to me, the obvious choices for an English teacher had already been taken. Should I take on the challenge of studying the Supreme Court? How would I ever connect the subject matter to my teaching? Then it occurred to me that there were in fact hundreds of works of literature that could be connected to Supreme Court decisions.

One novel is *Bone* by Fae Myenne Ng. It is listed as required reading for eleventh grade students in the School District of Philadelphia. How would my students respond to reading a book about Chinese Americans? I have heard them make comments like: "I went to the Chinese store." When they say this I ask, "Are you sure the people were Chinese? Perhaps they were Korean, or Japanese, or Vietnamese?" For them, anyone who appears to be Asian is automatically Chinese.

My students are predominantly African Americans. They are acutely aware of the many prejudices that are aimed their way. They also possess some understanding of the horrific history of prejudice and discrimination toward blacks in this nation. Yet my students remain woefully ill informed about

Deborah Samuel is an English Teacher at Robert E. Lamberton School in Philadelphia, Pennsylvania.



ISIAH WEST TABER, CHINESE VEGETABLE PEDDLER IN SAN FRANCISCO, CAL.

the horrendous acts of injustice that have been aimed at people of other ethnic origins. I therefore set out to write a unit that would not only create an interest in reading an assigned novel, but would also change my students' attitudes. I wanted my students to understand that other groups beyond their own have suffered horrible injustices and deserve our empathy.

I began by explaining the conditions of early 19th century China — the starvation due to overcrowding (one author listed 1,000 people per square mile), flooding, a war against the British, poor farming methods, crop failures, and more. We looked at a map of Southern China, and I asked, "Where could they go?" Then I explained the timing of the gold rush, and the railroad builders going to China to find employees. Where would you go if that were you? I explained that often one male member of the family would go to California, known as the "Golden Mountain," sending money home to keep the family from starving to death, and hoping to return in thirty or forty years. If you were in that situation, how bad would it have to be for you to give up and return home?

I showed my students a list of ordinances passed by the legislature of 19th century San Francisco:

- *The Sidewalk Ordinance of 1870:* Those who used poles to carry merchandise could not walk on sidewalks.
- *The Cubic Air Ordinance of 1871:* Each adult required 500 cubic feet of living space.
- *The Queue Ordinance of 1873:* Those who chose jail instead of a fine for violating the cubic air ordinance must have their queue cut off.
- *The Laundry Ordinance of 1873:* Anyone found carrying laundry with horse-drawn wagons would have to pay for a license.
- *The Wooden Laundry Ordinance of 1886:* Anyone operating a laundry in a wooden building must have a license.

I asked, "Who do you think had the custom of carrying merchandise in baskets connected by a pole?" They easily guessed it was the Chinese. We looked at a political cartoon entitled "You Know How it is Yourself!" and I let them find a small illustration of just such a figure in the background. I reminded my students of how the Chinese were here to help their starving families back home. What would be one logical way to save money? Wouldn't it be to share living quarters? So at whom do you think the requirement for 500 cubic

(continued on page 27)

Building Cultural Bridges through Literature

By Nancy Ann Wasser

Editor's Note: This curriculum unit for elementary school was written during the 2006 seminar led by Paul Fry on "Children's Literature, Infancy to Early Adolescence." Ms. Wasser's account here includes a detailed summary of the contents of the unit.

I designed my curriculum unit, "From Aztecs to Aztlan: Building Cultural Bridges Through Literature," to elicit in my Mexican and Hispanic New Mexican students an awareness and love for their rich cultural and literary heritages, to foster their understanding of and appreciation for common roots and shared cultural influences, and to nurture in them seeds of self-esteem and bring forth some blossoms. This bilingual Spanish/ English unit encompasses three historical periods: The Spanish Conquest, Immigration to Aztlan (North), and the Present Day; and it employs many literary genres. The students were third and fourth graders whose reading skills spanned levels from pre-kindergarten to seventh grade. Some surprising and serendipitous events transpired while they journeyed across these metaphoric bridges.

The unit's first topic — *Spain meets Mexico and a new race is born* — began with the study of Aztec pictographs and their meanings. Newly arrived immigrants, who spoke no English, found this a great way to bypass formal language problems. Using the 20-day Aztec sacred calendar, children adopted a symbol representing one day and practiced drawing it until satisfied with their representation. Then,

Nancy Ann Wasser is a Fourth- and Fifth-grade Teacher at Nava Elementary School in Santa Fe, New Mexico.

water, wind, rabbit, lizard and so forth were strung together, Aztec Codex style, to make the calendar. Children also constructed masks representing their symbols and Aztec ceremonial fans. Together we read Aztec folktales, creation myths, and stories of the lives of the main historical characters: Hernan Cortes, Moctezuma and La Malinche, the Mayan woman who translated for Cortes and by bearing a daughter by

ture while my students taught them how to make masks and fans.

From these activities sprang a play co-written by students of both classes in the form of poems describing their calendar symbols. Wearing masks and reciting poems, they acted out their characters. Parents and students formed an enthusiastic audience. A Beginning Spanish reader wrote this poem about *Eagle*:

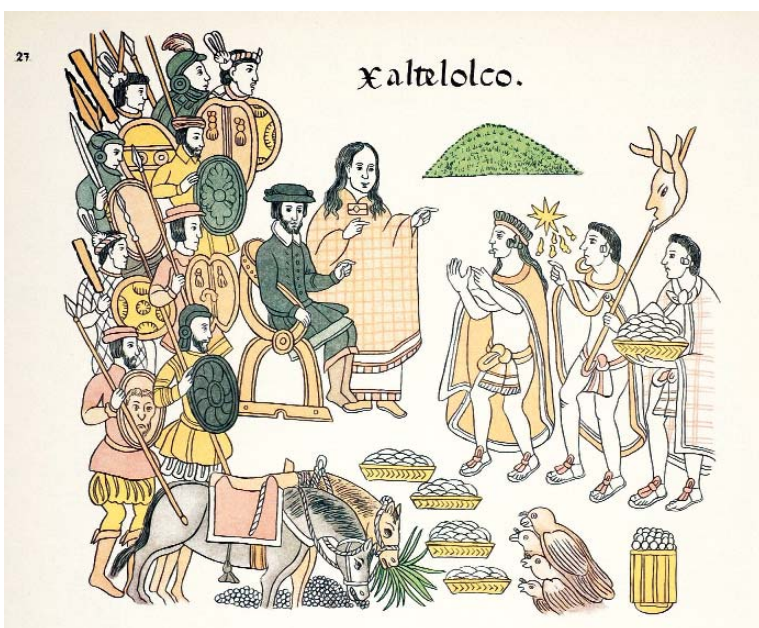
*Yo soy la águila
Orgullosa y fiera.
Vivo en nido alto.
Cruzando el cielo
Como una diosa bellísima.
Y también soy grandísima.*

Another girl wrote a poem about *Wind*:

*North, South, East, West.
I like when the wind blows best.
I, Wind, like to whisper to trees
And I love to play tricks no one sees.*

Class discussions ranged from historical battles to blood sacrifices to the new race born when Cortes and Malinche had children. One day a fourth-grade boy came to school clutching a thick red notebook. Its contents revealed a genealogical search tracing his roots back to the Conquest. Moreover, it proclaimed him to be the 23rd great grandson of Cortes and the 24th great grandson of Moctezuma!

The next topic — *You are my cousin, aren't you?* — treats the evolution of Spanish and Mexican people in the Southwest. We read a bilingual biography of Cesar Chavez; then students interviewed family members and wrote their biographies. Again, word of our *Aztecs to Aztlan* project leaked out, and our class was interviewed by a reporter for a Spanish language newspaper. In turn, students interviewed her about her life and work. They were thrilled to read about themselves and see their pictures in the newspaper.



ALFREDO CHAVERO, LIENZO DE TLAXCALA, 1892

him became Mother of a new race. Finally, students read historical literature based on stories collected by Spanish priests soon after the Conquest, relating tragic tales of battles between the two cultures following their infamous meeting in 1519.

Contrary to my fears, the children proved capable of digesting these grim tales — perhaps because they were cloaked in mythology and accompanied by colorful pictographs drawn from Aztec codices. Students devoured these books, and then swapped them for others, not relinquishing them until they had voraciously, and often painstakingly, absorbed their contents. Word about these books spread like news of Frito Pie for lunch, and soon the other fourth grade class was sharing our litera-

Zoladz: Learning to Read Foreign Films

While studying migration and settlement of Spanish descendants from Mexico traveling El Camino Real, we visited a "living museum" — a ranch settled in the 17th century by these descendants. Pretending we had just arrived in a covered wagon after six months traveling from Mexico City, the children made soap, carded wool, studied in a one-room school and ate sugar cane. They played with a wooden hoop and a stick and discovered it's not as easy as it looks to keep that hoop spinning! At the end of the day, tired from our play, we hopped on our school bus-cum-covered wagon and headed home. Later, children wrote lively descriptions of a typical day living on a ranch in the 17th Century.

The next topic — *New Mexico meet Mexico: When I look at you I see me* — examines stories of Mexican immigrant experiences and of Spanish settlers practicing customs and traditions of Old Spain. Many stories treat the protagonists' search for roots in their countries of origin. I could not pry these books away from students who transcended their reading mastery levels to uncover plots that involved their literary counterparts.

"My Personal Journey," our final project, was a book produced by each child, recording his or her own sacred stories, and courageously read aloud. One child recounted that her mother rushed to the border when her birth waters broke, but didn't make it to the bridge, so she was born in the United States. "I was almost born in Mexico," she divulged.

Students gobbled up the literature and activities in this unit, and I rejoiced to observe their accelerated growth. Their awareness of the benefactor behind this curricular gift became evident one day while we were discussing the discovery of a new planet. A nine-year-old boy led me to a computer where we searched for articles about it. "Ms. Wasser," he solemnly entreated, "maybe the next time you go to Yale, you could ask the professors over there about this new planet."

"I'll do it!" I promised.

(continued from page 24)

carpenter, he differentiated types of wood through touch. He also read many of the textured items he found in the natural world as if he were reading Braille. The tactile imagery made it possible to imagine what it would be like to be blind."

While watching *Keita: Heritage of the Griot* by West African filmmaker Dane Kouyate, the students looked for evidence of the oral tradition in both the content and form of the film. They also kept track, in a two-column chart, of aspects of the movie that were associated with tradition and history versus those associated with modern culture and the contemporary world. After identifying dozens of examples of these binary oppositions, the students discussed and wrote about how West Africans might reconcile the two, often conflicting, sides of their everyday lives. From there we transitioned to Chinua Achebe's *Things Fall Apart*, which also deals with cultural clashes, leaving open the question, "how do we move forward from here?" The students made personal connections to these themes through self-reflective essays addressing their own struggles to become independent individuals. How have they incorporated the values and traditions of their families and upbringing while forging their way to their own identities?

Beyond teaching my students to appreciate different aesthetic sensibilities, and exposing them to the challenges faced by developing countries, these films may play a humanitarian role in their lives as well. By giving students the chance to step inside the shoes of the "other" and see the world from a new perspective, the films create empathy for people of vastly different cultures, cultures that are often misunderstood in the United States. From my students' comments and writing, I know the films and literature of Afghanistan and Iran, for example, changed many of their perceptions of Islam and the Middle East. At this historical and political juncture, I can think of no more rewarding outcome for a teacher of tomorrow's voters and leaders.

Samuel: Chinese-American Experience

(continued from page 25)

feet of living space was aimed? Again, they easily guessed, "The Chinese!"

I explained that legislatures were frustrated because the cubic air ordinance was not working as they had hoped. When someone was found in violation, they had been given a choice of spending 30 days in jail or paying \$50. Which choice do you suppose most Chinese immigrants had taken? At this point, the students immediately knew that the jail term had been the choice. Next I asked them to look at the famous political cartoon entitled "Pacific Chivalry" from 1869. We discussed the unusual hairstyle. I explained that the Chinese emperor required of his subjects the style of growing a long braid in the back and shaving the front of the head. To cut off the braid would show disloyalty. The students understood that this queue-cutting ordinance was therefore entirely punitive and aimed at one group and one group only.

Next we discussed the issue of the wooden laundry. I explained that of about 300 laundries in San Francisco, about 270 were made of wood. How many of those do you suppose were owned by the Chinese? All of them, my students guessed. Actually, I explained, all wooden laundries except one were owned by the Chinese, and that one exception was given the needed license. The difficulty written into the law providing for the licenses was that a non-Chinese person had to be a witness for said license to be provided — a difficult problem for members of a group who spoke a different language, and who faced so much discrimination.

At this point, one of my students, a young lady who had studied the Black Panthers and who was my most active student in favor of black rights, asked, "So are you saying that all groups faced discrimination when they came to this country?" I knew then they had gotten the point! While there may be exceptions, I explained, you are mostly correct. Many, many groups have struggled with discrimination once they arrived here. We were now ready to read our novel about Chinese Americans.

Things, Foods, and How We Know

By Jennifer B. Esty

Editor's Note: This unit, written in Mary Miller's seminar in 2006 on "Native America: Understanding the Past through Things," is designed for students at a Center for pregnant teenagers. Its focus is the study of Native American traditions surrounding the preparation and consumption of food. It models the process of scientific inquiry as it explores the use of science in anthropology, history, and archeology. The unit also serves to prepare students for Hispanic Heritage Month, and to introduce them to the way in which information is scientifically collected, analyzed, and distributed. (Part of every science curriculum as taught in Connecticut must deal with the use and evaluation of information.) After analyzing a culture's culinary objects, its types of foods, and their nutritional content, the students will then develop a new diet for themselves.

It has been a year since I finished my curriculum unit, "Things, Food, and How We Know." Since then I have had the opportunity to teach the unit and to reflect on my experiences of the seminar and of teaching the unit. Mary Miller's seminar was an unforgettable experience. Mary has a way of leading a seminar that inexorably draws the participants into the subject. She made complex American cultures come alive through her portrayals of their stories, their artwork, and reenactments of their interactions. Her knowledge is vast, and her comprehension of the cultures we discussed seemed to be that of an inhabitant born into cultures that have been largely defunct for hundreds of years. She made paintings and photographs come alive with her explanations of their stories.

Mary, however, wasn't the only one in the seminar making stories come to life.

Jennifer B. Esty is a Science Teacher at Polly T. McCabe Center in New Haven, Connecticut.

She asked the Fellows in the seminar to assist her in her efforts by reenacting interesting moments in the cultures we were studying and by sharing our works-in-progress with the seminar. The reenactments were a great way to gain an emotional connection to what might have been rather dry material in other hands. Mary also asked the Fellows to participate by teaching to the seminar some parts of the lessons we were including in our curriculum units. This was always interesting because the rest of the Fellows were asked to be students of an appropriate age for the lesson. We got to be kindergarten, music, art, English and History students; we even got to be pregnant teenagers. Not only was this exercise extremely amusing, but it also allowed all of the Fellows to test bits of their units and get helpful feedback from other experienced teachers. The Fellows also could see what others were doing with the information from the seminar. The feedback from other experienced teachers was valuable to me as I was writing my unit because it allowed me to make changes to the unit before actually teaching it. And I freely admit that I also borrowed a few ideas from other teacher's presentations when I taught my unit. I suspect that I was not the only one to do so!

The seminar passed all too swiftly. Drafts were submitted and returned with suggestions, and the final units were then submitted. September swiftly followed August, and I began teaching my unit on nutrition and diet with another teacher in a special "wellness" class we have for our students. The students began the unit with some activities designed to encourage inquiry and curiosity, both essential traits for budding scientists. The unit continued with an introduction to Aztec, Mayan, Inca and Wampanoag culture and foods. This was a particularly popular lesson because I brought in some of the foods we discussed for the students to sample. After sampling some of the foods, the students were asked to choose a culture that looked

particularly interesting to study. I was somewhat surprised to find that my students actually divided themselves into fairly equal sized groups. During a few of our weekly meetings, the students used internet resources and books to collect information on the traditional diets of the particular cultures they chose to study. After collecting information, the students put together an ideal meal for their chosen culture. These ideal meals became the basis for the food at a reception and awards ceremony just before Thanksgiving.

After Thanksgiving, the students studied their own diets. They created a giant, wall-sized data table to present the information on their own diets and on the diets of the cultures they studied. I considered my unit to be reasonably successful when I began to observe my students eating fruit instead of candy and fresh popcorn instead of potato chips. On completing the unit, the students had tried some new foods and had gained a new understanding of the basics of a nutritionally balanced diet.

The students especially enjoyed the part of the unit where they got to practice nutrition by eating — but then, they are teenagers! They also enjoyed the opportunity to study cultures that *they chose to study*. And they enjoyed the opportunity to conduct research with their fellow students. Most significantly, perhaps, the students enjoyed the opportunity to study a subject — nutrition in this case — in a practical, directly applicable manner.

There are a few changes in the unit that I will probably make for next year, which will shorten the amount of time we spend on it, but this is certainly a unit that I intend to teach again. The unit set the groundwork for later projects and presentations in the "wellness" class where it was taught, as well as in later biology and physical education classes. Most importantly, from the standpoint of "wellness," it gave the students a chance to explore new, healthy, tasty, and affordable options for use in their own diets.

Native American Traditions and Identity in the Art Room

By Cristian Antony Koshock

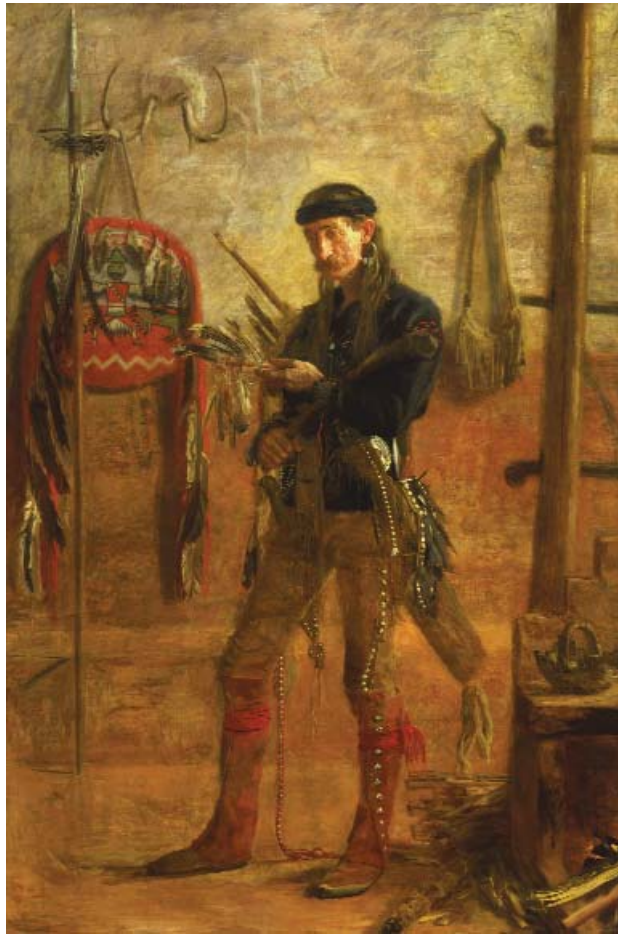
Editor's Note: This curriculum unit, also written in the 2006 seminar led by Mary Miller, is designed for art courses in a school devoted to the education of African American students. It explores the difficult issues of "identity" through celebrating the cultural accounts of the students themselves as well as the artistic traditions of the American Indians. As the students survey art and history and also engage in self-examination, they formulate definitions of "identity" that include reflection on tangible objects and recognize the inspiration informing traditions in each group of people. The four modules of this unit (the first of which is described in this piece) focus on "Mask," "Vessel," "Cloth," and "Path." Each module explores one aspect of a complex "identity."

A lively chain of events happened on the day that I began teaching the curriculum unit that I prepared as a National Fellow in Mary Miller's seminar on "Native America: Understanding the Past through Things." I was excited and energized from the experience in New Haven, from my time spent learning with the seminar leader, and from promoting the Initiative model for my school district in early in-service programs. Back in Richmond, Virginia, it was just after the start of the school year, and the climate of the school was still back-to-school fresh, with new sneakers making squeaks in the hallways and deep creases in the pressed pants and shirts of the students. It seemed like the perfect time to introduce the unit to my students.

Part disruption and part defiance, the behavior of my students in advanced art on

Cristian Antony Koshock is an Art Teacher at Armstrong High School in Richmond, Virginia.

the day in question was, without a doubt, partially fuelled by a sense of familiarity with me (I had taught most of the group in classes leading up to this one) and the appearance at lunch, right before my class, of bright red frozen slushies — which had curiously side-stepped the wellness food program recently adopted by our district.



THOMAS EAKINS, FRANK HAMILTON CUSHING, 1895

My students' unruly behavior meant that a new introduction of the lesson would have to come, after a refresher of class structure and the treatment of several cases of brain freeze.

I like to relate this portion of my story when I tell about the teaching of the unit, as it acknowledges some challenges that faced me, and also because it indicates the kinds of material needed to hold my students' interest, i.e., topics relative to their own life

experiences, which could translate into compelling art experiences. I designed my unit as a mixture of Native American traditions and a form of teenage angst, focusing on issues connected to forming one's identity. There are wonderful examples of how Native peoples express identity and association. I had a good feeling that my students, predominantly African Americans, would identify with the past and present circumstances of Native Americans. I knew specifically that some students could claim heritage from Native sources and figured that this would make for a fantastic bridge to the information. I chose to use the section of my unit, entitled *Mask*, which focused on how the individual influences the characteristics of identity and how these are interpreted or misinterpreted by others.

In the classes that followed, I was pleased to have students onboard and focused on the unit. The lesson began with a discussion from a writing prompt on the chalkboard: "Relate an incident that you have heard of, or which has happened to you, where there was a case of racial profiling." Students shared in earnest what they had written down. Vocabulary terms were introduced and discussed and even the dictionary was brought out to correlate definitions from reference sources and slang usage. There came an understanding when students saw that multiple definitions fuel multiple perspectives.

We followed up with a visual display of images of the American Indian: some Eurocentric, others New World. Students were able to respond to the images through comparison and connected the aspects of multiple perspectives to the image of the Indian as they had earlier to themselves. Examples included paintings, early photographs, product and sports' team logos, and video (from the 1971 Anti-Littering campaign, with Iron Eyes Cody).

(continued on page 30)

Carpenter: Planning for a Teachers Institute

(continued from page 7)

state-of-the art tools and techniques to challenge, engage and effectively teach.

For the educational component in the summer of 2005 and 2006 the district supported nine National Fellows by providing professional leave for them to attend the YNI May orientation and the Fall Annual Conference. The Fellows then met with me and the executive team in October 2006. The following two months, the YNI mission was presented to SFPS Board and other administrators.

The SFPS district works collaboratively with the community of Santa Fe in many ways. With collaboration at the forefront, the College of Santa Fe (CSF) was invited to participate in this endeavor, and President Mark Lombardi answered the call. This began a series of preliminary discussions between SFPS and CSF. The fifteen articles delineated in the Articles of Understanding served as the foundation for our planning process. The Declaration of Intent to Plan was being drafted and in July 2007, three CSF faculty and six SFPS Teacher Fellows attended the YNI Intensive Session. In August 2007 the Declaration was revised, solidified, and submitted to Yale.

In September 2007, the Yale National Initiative received SFPS district's Declaration of Intent to Submit a Planning Application. A Santa Fe Teachers Institute Planning Committee will be organized by the City Representative; and will be comprised of public school teachers selected from former National Fellows to represent elementary, middle, and high school teachers interested in developing and planning a local institute. The Superintendent and the Director of Curriculum and Instruction will serve as the District liaisons to the planning process for the Santa Fe Teachers Institute. The higher education institution will be represented on the Planning Committee by its president as well as representative(s) from its faculty. The Planning Committee will dedicate time to the task of identifying a Planning Director to recommend to the Yale National

Initiative and outline specific roles and commitments of each of the local institute's partners: SFPS and the College of Santa Fe.

The next step is to select a planning director to recommend to the Yale National Initiative, and to outline the specific roles and commitments of each of the local Institute's partners. The purpose of the Planning Phase is to enable a full exploration of the partners, major strategies, scope, personnel, and funding of a Santa Fe Teachers Institute that conforms to the "Articles of Understanding."

Education is not a race where the prize goes to the one who finishes first. To help students develop literacy and a lifelong love of learning we need to respect and strengthen their individual abilities and drive to learn. The challenge for teachers and leaders will be difficult, but the satisfaction is worth the effort. The Yale Initiative is designed to be an invitation for those in education to assume a more active role in curriculum professional development. Becoming an effective teacher requires being totally committed to an important idea, having unwavering faith in the process, and understanding and promoting the value of positive change.

Santa Fe Public Schools

SFPS district is composed of 27 school sites including 20 elementary schools, 4 middle schools, 2 comprehensive high schools, a bilingual early childhood center, an alternative high school and 4 charter schools. Additionally, the Santa Fe Public Schools provides educational services to registered home school students, and to students at the New Mexico School for the Deaf, the Santa Fe County Juvenile Detention Center and the New Mexico Girls Ranch. In total, the District serves approximately 13,000 students and has 1,800 plus employees, 50% of whom have a Masters Degree or higher. The student population is composed of 67% Hispanic, 23% Anglo (Non-Hispanic), 3% American Indian, and 7% other or unidentified.

Koshock: Native American Traditions and Identity

(continued from page 29)

My students exceeded expectations by demonstrating an air of helpful and cooperative effort during the studio portion of the lesson. Each student submitted to the process of having his or her face cast with plaster gauze and, in turn, assisted in the casting of a classmate's face. The process took about forty-five minutes to complete individually and happened over a span of two class periods. Proper care of materials and clean up procedures were covered in a teacher demonstration.

Connected and invested in their projects thus far, my students continued to work by planning out the manner by which their masks would display indicators of their identity. Embellishment of the masks was to be two-fold: The outside of the mask was saved for the individual projection of identity and the stereotyping or misconceptions of others. The inside of the masks we saved for the representation of the true self. Colors and symbols from contemporary and Native sources, and collaged and three-dimensional elements would combine to form convincing and personal works of art.

Closure of the lesson came with the presentation of masks by students. Hard work and thoughtful inclusion of Native and personal imagery brought about compliments and encouragement from the audience. A hush fell during one presenter's turn, as he explained how his thuggish clothes and Jamaican accent belied the scope of his actual knowledge and feelings — his immigration from a war-torn African nation, his desire for peace for the people of Darfur, and his sincere hope to become a doctor — his solution for the problems he witnessed. It was clear to all that he had a command of the lesson's objectives. It became clear to me, also, that it took a certain quality and scope of study and preparation to engage students on this level, which I attribute to my time at Yale, and the combination of content and intent to form a curriculum unit that had my students in a hush, until the silence was broken: "Man, I know you got an A!"

Lieberman: Teachers Institutes for the Nation

(continued from front cover)

confidence and enthusiasm when they have a deeper understanding of the subject matter that they teach and this translates into higher expectations for their students and an increase in student achievement.

The Teachers Professional Development Institutes are based on the Yale-New Haven Teachers Institute model that has been in existence since 1978. For over 25 years, the Institute has offered six or seven 13-session seminars each year, led by Yale faculty, on topics that teachers have selected to enhance their mastery of the specific subject area that they teach. The subject selection process begins with representatives from the Institute soliciting ideas from teachers throughout the school district for topics on which teachers feel they need to have additional preparation, topics that will assist them in preparing materials they need for their students, or topics that will assist them in addressing the standards that the school district requires. As a consensus emerges about desired seminar subjects, the Institute director identifies university faculty members with the appropriate expertise, interest and desire to lead the seminar. University faculty members, especially those who have led Institute seminars before, may sometimes suggest seminars they would like to lead, and these ideas are circulated by the representatives as well. The final decisions on which seminar topics are offered are ultimately made by the teachers who participate. In this way, the offerings are designed to respond to what teachers believe is needed and useful for both themselves and their students.

The cooperative nature of the Institute seminar planning process ensures its success: Institutes offer seminars and relevant materials on topics teachers have identified and feel are needed for their own preparation as well as what they know will motivate and engage their students. Teachers enthusiastically take part in rigorous semi-

Joseph I. Lieberman is United States Senator from Connecticut.

nars they have requested, and as part of the program, practice using the materials they have obtained and developed. This helps ensure that the experience not only increases their preparation in the subjects they are assigned to teach, but also their participation in an Institute seminar gives them immediate hands-on active learning materials that can be used in the classroom. In short, by allowing teachers to determine the seminar subjects and providing them the resources to develop relevant curricula for their classroom and their students, the Institutes empower teachers. Teachers know their students best and they know what should be done to improve schools and increase student learning. The Teachers Professional Development Institutes promote this philosophy.

From 1999-2002, the Yale-New Haven Teachers Institute promoted a National Demonstration Project to create comparable Institutes at four diverse sites with large concentrations of disadvantaged students. These demonstration projects are located in Pittsburgh, Pennsylvania, Houston, Texas, Albuquerque, New Mexico, and Santa Ana, California.

Follow-up evaluations have earned very positive results from the teacher participants in the Yale-New Haven Institute, as well as the four demonstration sites. The data strongly support the conclusion that virtually all teachers felt substantially strengthened in their mastery of content knowledge and they also developed increased expectations for what their students could achieve. In addition, because of their involvement in the course selection and curriculum development process, teacher participants have found these seminars to be especially relevant and useful in their classroom practices. Mr. President, 95 percent of all participating teachers reported that the seminars were useful. These Institutes have also served to foster teacher

leadership, to develop supportive teacher networks, to heighten university faculty commitments to improving K-12 public education, and to foster more positive partnerships between school districts and institutions of higher education.

Many agree that teacher quality is the single most important school-related factor in determining student achievement. Effective teacher professional development programs that focus on subject and pedagogy knowledge are a proven method for enhancing the success of a teacher in the classroom.

Though a K-12 teacher shortage is forecast in the near-term and many new teachers will be entering our schools, those teachers who are presently on the job will do the majority of teaching in the classrooms in the very near future. For this reason, it is imperative to invest in methods to strengthen our present teaching workforce. Like many professions, the quality of our teachers could diminish if their professional development is neglected. Positive educational achievements occur when coursework in a teacher's specific content area is combined with pedagogy techniques. This is what the Teachers Professional Development Institutes Act strives to accomplish.

The Yale-New Haven Teachers Institute has already proven to be a successful model for teacher professional development as demonstrated by the high caliber curriculum unit plans that teacher participants have developed and placed on the web, and by the evaluations that support the conclusion that virtually all the teacher participants felt substantially strengthened in their mastery of content knowledge and their teaching skills. Our proposal would open this opportunity to many more urban teachers throughout the nation.

I urge my colleagues to act favorably on this measure.

Support the Teachers Institutes Act at
<http://teachers.yale.edu/legislation>

On Common Ground

Strengthening Teaching through School-University Partnership

Spring 2008
Yale-New Haven Teachers Institute
Phone: (203) 432-1080
Fax: (203) 432-1084
E-mail: Common.Ground@yale.edu
World Wide Web: <http://teachers.yale.edu>

Executive Editor, James R. Vivian
Chairman, Editorial Board, Thomas R. Whitaker
Art Advisor, Jules D. Prown

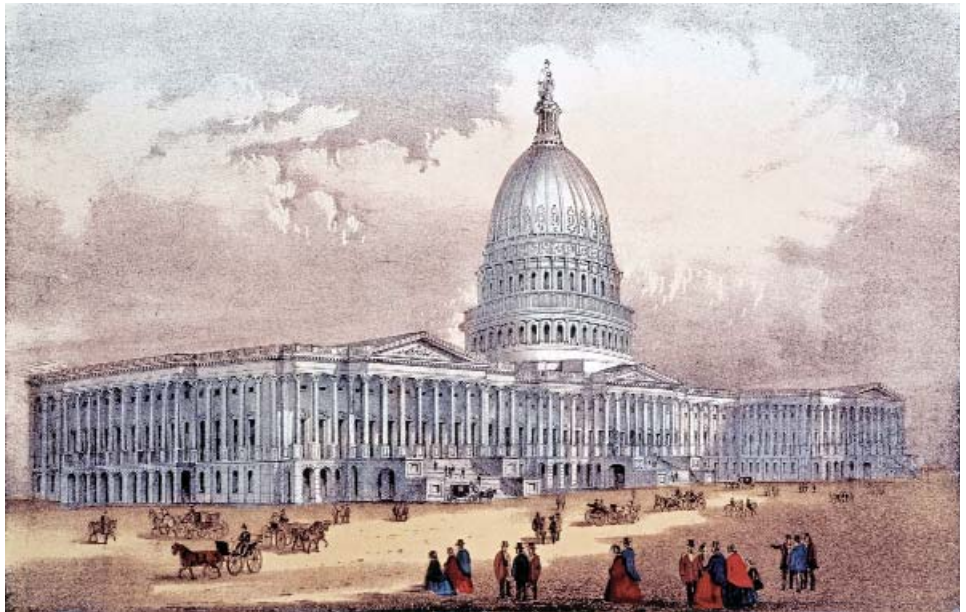
The Yale-New Haven Teachers Institute is an educational partnership between Yale University and the New Haven Public Schools designed to strengthen teaching and learning in local schools and, by example and direct assistance, in schools across the country. In 2004, the Institute announced the Yale National Initiative to strengthen teaching in public schools, a long-term endeavor to establish Teachers Institutes in states throughout the nation.

DeLauro and Courtney: Teachers Institutes for the Nation

(continued from front cover)

Professional Development Institutes across the nation to bring together faculty members from universities or colleges and public school teachers from low-income school districts. This program is modeled after the successful Yale-New Haven Teachers Institute, which for 30 years has maintained an intensive and sustained collaboration between faculty members of Yale University and public school teachers. Unlike other teacher preparation models, this program places equal emphasis on teachers increasing their subject knowledge and on their developing teaching strategies that will be effective with their students. Teachers suggest topics they believe will enrich their classroom instruction. The university or college faculty members contribute their subject knowledge and expertise, while the school teachers contribute their expertise in elementary and secondary school pedagogy, their understanding of the students they teach, and their grasp of what works in the crucible of the classroom. The program requires that the teachers, with guidance from a faculty member, write a curriculum unit to be used in their own classroom and to be shared with others in the same school

Rosa L. DeLauro and Joe Courtney are United States Representatives from Connecticut.



CURRIER AND IVES PUBLISHERS, *THE CAPITOL IN WASHINGTON*

and other schools through both print and electronic publication.

This program has already been replicated successfully through Teachers Institutes in Pittsburgh, Philadelphia, and Houston. Currently seven additional cities in seven states Charlotte, NC; Santa Fe, NM; New Castle County, DE; Atlanta, GA; Richmond, VA; Chicago, IL; and San Francisco, CA are participating in work sponsored by the Yale National Initiative, and actively considering or planning new Institutes.

If passed, our legislation would authorize \$30 million over five years and make federal funding available to as many as 40 states in all. With these Institutes, states and school districts might also learn from their immediate experience about more effective ways to invest federal and local resources in strengthening teaching and learning.

Too often we hear from teachers that their professional development opportunities are too narrowly related to the adop-

tion of a specific curriculum or textbook. In a way that respects them as professional educators, we must give teachers the opportunity to deepen their knowledge of the content they teach and then help them forge a plan to incorporate what they have learned into their classrooms. This program, with the help of university or college partners, does just that. Teachers have been found to gain confidence in their own understanding of the subject matter and enthusiastically deliver their new curriculum to the classroom. Those results translate into higher expectations for their students and higher student achievement.

Expanding this successful program across the nation will allow even more teachers the opportunity to gain additional sophisticated content knowledge and a chance to develop a curriculum that can be directly applied in their classrooms. When we strengthen teacher training, student academic achievement wins.

Yale University
Yale-New Haven Teachers Institute
P.O. Box 203563
New Haven, Connecticut 06520-3563

CHANGE SERVICE REQUESTED

NON-PROFIT ORG.
U.S. POSTAGE
PAID
PERMIT NO. 4239
Minneapolis, MN