Appendix C
The Future
of Teaching C

"Education is not preparation for life, it is life itself.—John Dewey

*N*ovember 7, 2005. You are a member of a Program Quality Review panel for the California State Department of Education. The panel is beginning the first formal review of one of the most successful school districts approved under the Charter School District Initiative of 2000.

Over the past five years Pacifica school district has become a model of how changing teacher-student and school-community relationships can create positive learning environments. Unlike other models that begin by changing instructional practices, in this design it was the job of teaching that was the primary focus of change. This Charter District radically altered the roles and responsibilities of all positions from teacher to superintendent.[1]

PLANNING OFFICE OF CENTRAL ELEMENTARY

Your day-long assessment begins in the planning office at Central Elementary School. The panel is now meeting with the Senior School Planning Team composed of four master teachers at Central Elementary: Barb Milner, Nancy Broyles, Ben Barrel, and

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[1] This paper is written primarily in the "voice" of teachers to reflect their central role in educational change. My experience with educational technology has reinforced my belief that it strongest potential is as a communication tool to amplify the voice of teachers and students. Without their voices, there can be no significant educational change. As much as possible, I want to share the visions that have evolved from my work with some of the best educators in the world. This paper is more about the process that took place among the players in this scenario than it is the end result. For a much detailed description of how current reform efforts are supported by exemplary use of technology, see M. Riel, "Educational Change in a Technology-Rich Environment," *Journal of Research on Computer in Education*, vol 26, No. 4, pp.452-474

by

Margaret Riel

Interlearn

Josie Rowe. Barb and Nancy are co-principals at Central. Ben is working on a curriculum committee at the State Department of Education. Josie is part of the district's Superintendent Team. You are listening to Co-Principal Bab Milner describe the history and rationale for setting up a Charter District model.

Barb Milner: By the end of the 20th century, it was clear that schools designed on the "industrial model" to transmit knowledge were no longer serving students, teachers, or our communities. But it was hard to find models for change. There had been more than one "education president," and "education governors" had led many states. Some of these leaders believed that technology was the answer; they set up models to "infuse the school" with advanced technology, hoping student skills would rise dramatically. But research showed that while students were able to learn how to use the technology, there was no significant improvement in academic achievement.[2] Real educational change required changing the relationship among teachers, learners, information, and experience.[3]

As you know, the first attempts at changing these relationships were mostly isolated. For example, the "Charter Schools Initiatives" in Minnesota, California, and other states led to some limited success in educational innovation.[4] In these schools, teachers, parents, and members of the community could develop plans for an individual school without having to follow all of the established state or district regulations. But these efforts divorced the school from valuable district, state, and national services. The "Star Schools Initiative" in the early 1990s helped science teachers come up with "action plans" for science education, but these innovations were not well integrated with other aspects of school learning. Privatizing public education was marginally successfully when the "public" children came from relatively privileged backgrounds. But these schools did not provide the promised "quick fix" to address complex social problems faced by schools across the country. They often concentrated on low-level skills with a focus on test taking. These isolated attempts were neither cost-effective nor efficient in providing quality education to all children.[5]

In the mid to late-1990s, the rapid growth of the National Information Infrastructure pushed teachers to the limit with new responsibilities. Before long teachers everywhere were overwhelmed with electronic mail and conferences on every topic.

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[2] One the most dramatic efforts of infusing schools with technology is the "Apple Classrooms of Tomorrow" project. The extensive research on student achievement in these classrooms show that the students did about as well as they might have without all of the technology. That is, that they were able to learn how to use a complex set of tools without and loss of school achievement. But this research failed to validate an assumption that and infusion of technology would be the simple answer to the problems faced by schools. Dwyer, D. (1994) "Apple Classrooms of Tomorrow: What We've Learned," *Educational Leadership*, vol 51, No. 7, pp. 4-10.

[3] Many of the school reform initiatives suggest that the failure of schools is directly related to existing power relationships in schools. Specifically these views can be found in S. B. Sarason. *The Predictable Failure of Educational Reform*. (San Francisco: Josesy-Bass Publishers, 1990) and in S. Sarason, *Culture of the School and Problem of Change*, (Boston, MA: Allyn and Bacon, 1982).

[4] For more details on the charter school initiatives and their process across the U.S., see, Bierlein, L. and L. Mulholland (February, 1994). *Charter School update: Expansion of a Viable Reform Initiative*. Tempe, Ariz.: Morrison Institute for Public Policy. For a discussion of the California Charter Schools, see Diamond, L. (1994) "A progress report on California's Charter Schools. *Educational Leadership*, vol. 52, No. 1, pp. 41-45.

[5] The current experiment, Education Alternative Inc. (EAI), headed by John Golle, has not succeeded in raising test scores of students in eight Baltimore schools even with dedicating 30 minutes a day to taking drills in math and reading that are similar to those used in tests. Recently the U.S. Department of Education concluded that EAI is not providing special education students needed services in their mainstreaming efforts. There are similar concerns that money allocated for disadvantaged student is not being used for this purpose. The Edison project has set higher educational goals with a longer school day and a longer year but they have yet to demonstrate that they can reach their goals in a cost-effective way. For more information on the issue of privatization of schools, watch for a new book by Thomas Toch, senior editor at U.S. News and World Report, or read T. Toch "Privatization: News form the Front" *American's Agenda*, vol 4, No. 3, pp. 12-17, 46.

We were wasting too much of our most valuable educational resource—teacher time. And students were wasting classroom time on undefined explorations, looking just to see what was there.

As we approached the 21st century we knew that a revolutionary plan for changing teaching and learning was necessary. That "revolutionary" change came when we understood that we needed to create schools where *change was an ongoing process* rather than an end state. Once we accepted this idea, it was clear that we would have to change the way a teacher spends his or her day. And once we got started, we realized that this would only be possible if we changed our educational system.

▌ Overview of Changes in Leadership Roles

Barb Milner: Before we visit the Learning Centers, we want to give you a brief overview of the changes. It has been only five years since we initiated our new plan, although we began planning in the mid-1990s. Before the shift, we kept trying to come up with the right mix of interpersonal and intellectual skills to define our conception of the "ideal" teacher. Some of us experimenting with models of "school site management" wanted teachers to be curriculum developers with leadership roles in organizing the school. But some teachers saw these new roles stretching teachers too far and moving them away from the classroom at the cost of student learning. They wanted to focus on students' learning styles. And then there were teachers who had "had enough." They were tired of having every social problem dumped at the classroom door, being asked to work at the pace of a hospital emergency room without support and then being "held accountable" for all failures. They didn't want another meeting on any topic!

We were getting nowhere. There were so many different skills that defined teaching that reaching consensus about an ideal teacher was surprisingly difficult. And most of our designs were so overwhelming that without changing salaries or adjusting the demands placed on teachers, we knew these "super" teachers were unrealistic. So, we took a different approach and decided to develop a role for teachers with differing strengths and abilities. We wanted to develop a system that recognized achievement but also provided opportunities for people with different talents to play a role in education. One of the most difficult circumstances constraining us was a very lean school budget. Our current plan has evolved from thinking about our options and working together. While it hasn't always been easy, it has been a great experience.

At this point, Barb pauses and looks toward the other master teachers. The exchange of glances seem to underscore the last statement. Ben Barrel continues.

Ben Barrel: We realized that our visions and tools would have to work within the organizational climate of schools. And that climate needed to be one of collaboration. Teachers and students, their relationships to one another and to sources of information and patterns of thought, could not remain insulated in classrooms. The changes you will see today came from increased communication and partnerships among teachers and through relationships we developed with students, librarians, museum curators, publishers, developers, scientists, and researchers both near and distant and at all levels of school leadership. These connections between the classroom and the world have been the path of educational change for us.[6]

We started with changing the teacher's role because we knew that we could not ask a teacher to do any more without changing the dimensions of the job. We were just stretched too thin. We needed to design a system where a teacher's expertise in working with students was rewarded and re-

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[6] Case studies of changes that have taken place when school administrators move toward transformational leadership patterns can be found in Leithwood, K.A, & R. Steinbach. "Indicators of Transformational Leadership in the Everyday Problem Solving of School Administrators*." Journal of Personnel Evaluation in Education* vol 4, No. 3, pp.221-244.

spected. But we also wanted a system where the rewards for good teaching *did not result in leaving the classroom.* While I enjoy my work developing curriculum on our state committee, I do not want to give up teaching.

We began to evolve a new plan for teaching and learning as a community. We were well underway when the Charter School District Initiative was announced. It provided the perfect vehicle to test our ideas. We were the second district to have our charter accepted. I had been doing grade-level "team teaching" for a number of years and the idea for Learning Centers evolved from our work. At first I teamed with two other teachers. The hard part was finding time for planning. At the same time we were involving students in more independent project-based learning using telecommunication and multimedia tools. Initially, our School Site Council provided some funds for a long-term substitute teacher who provided some flexibility, but what we needed was what we now call "Learning Guides." Josie, are you planning to describe learning guides now or later?

Josie Rowe: We only have time for a brief description now. Later, when we meet in the business office, I will give you some charts that will help us discuss the economic issues of staffing. Learning guides are para-professionals who help students learn, but they do not have all the added responsibility of teachers. They are not expected to develop curriculum or plan the overall design of the Learning Centers. Learning guides supervise and facilitate independent and group work by students. Since they move through the Centers with the students, they get to know the students well and create a consistent set of expectations for appropriate Center behavior.

As you will see when you visit the Centers, we encourage students to take responsibility and control of their projects and activities. This makes it possible for teachers to work with smaller groups while larger groups of students are working under the supervision of learning guides. Some demonstration or performance lessons by our mentor or master teachers are designed for the whole Learning Center, or close to 100 students. Students move from small intense groups to larger groups both for lessons and for project work.

While learning guides were the only completely new position we created in our district plan, all positions have been significantly altered. Maybe some personal history will help you see this. I was an assistant superintendent in this district at the time we began the process of change. I had been a teacher and I loved teaching and experimenting with different approaches. Ironically, it was my experience working as a teacher/researcher on a university project research team that pulled me away from the classroom. I found it so intellectually stimulating to be a team member with my university colleagues that when the project ended, I was no longer happy only teaching students. While I loved teaching, it was not enough of an intellectual challenge. I found I missed the learning and especially the collaboration with colleagues that had been a part of the research project. There just wasn't enough time in a day of classroom teaching to think!

I took a break from teaching and went back to the university to get an administrative credential and some computer skills. I was rehired by the district as a computer coordinator and then principal of Seaside Elementary. From there I was promoted to assistant superintendent of school services. But from the time I left the classroom, I missed my time with the kids. I had often considered leaving my district position and returning to the classroom—even considering the cut in pay!

The teachers who proposed that all administrators teach expected resistance. They were surprised to find out how many of us missed teaching. Our administrative duties are now spread over four master teacher-superintendents instead of the one superintendent and two assistant superintendents of the past. Each master teacher-superintendent is assigned to two schools. We also work very closely with the co-principals at each school. A master teacher-superintendent rotates to a different pair of schools each year and takes on slightly different duties. In our superintendent meetings, we collectively bring with us a rich and extensive knowledge of our district

schools because all of us are teaching. And we work closely with all of the teachers who have been central in evolving this new model. In some ways, our work is that of creating and managing a culture of professional reflection among peers.[7]

Quality Review Panelist: Don't you find it hard to move back and forth between district offices and school sites for teaching? I would think you would waste a lot of time traveling.

Josie Rowe: Well, the easy answer is no, because the district offices are located at every one of our schools. With computer telecommunications, we realized that common physical location was no longer an issue with most of our "meetings" taking place every day online. We sold the district buildings and used the income to build an office complex at each of our eight schools. You will have a tour of these buildings after your visit to the Centers. By locating offices at the schools, we could share equipment and resources which saved money and provided better services to teachers.

Quality Review Panelist: What about group meetings?

Josie Rowe: We often meet in groups of different sizes and the meetings are held at different schools. Sometimes I travel to these meetings, but I also have the option of teleconferencing which works almost as well. We have so many more options for collaborative work than we did in the past.

Nancy Broyles: Access to district offices here at the school is a real benefit for us as you will see when you visit them. But let's move to the topic of Learning Centers. We want you to be in the Centers as the school day begins, so I want to give you a brief overview of our instructional programs.

▮ Overview of Learning Centers

Nancy Broyles: Many of the ideas for our plan have come from our work online with schools around the world. Working with distant teachers has resulted in many new ideas that I don't think we would have had without electronic connections. One of our major concerns was that in the past students were asked to master discrete low-level skills and learn isolated facts. We wanted students to master subject matter in depth, learn how to develop and apply problem solving skills, and most of all learn strategies and develop interests that would help them throughout their lives. It was this thinking that led us to create Learning Centers instead of classrooms.

The Center curriculum is based on the new California Frameworks for Theme-Based Instruction.[8] Ben and some of our district mentor teachers were on the state committees that developed these new curriculum plans. We are very proud of our participation. By making it possible for our teachers to work with the larger educational community, they have developed expertise in national and international arenas which enriches their teaching and brings many rewards to the whole district.

We are now in the second year of our experiment with a new way of grouping kids. We have multi-age learning teams with an average of 85 students to a team. We moved away from age grouping because the competition too often resulted in kids who gave up trying to learn. We found that student interest makes it possible for kids of different ages to work together as partners.

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[7]For more discussion on the role of administrators to create and manage collaborative cultures, see Fullan, M. G., "Visions that Blind," and Hagstrom, D., "Alaska's Discovery School" and Schmuck, P., "Educating the New Generation of Superintendents" *Educational Leadership* vol. 49, No. 5, 1992,19-20; 23-26; 66-71.

[8] These documents do not exist but they would be the natural extension of the excellent curriculum frameworks developed in California. Many of the current frameworks celebrate a theme-based structure for learning. But beyond the content, I want to highlight the collaborative process involved in writing these guides. Educators, writers and resource experts work together to create a plan for instructional innovation.

Our emphasis is on participation and accomplishments and not competition and comparisons. We find this cross-age grouping very effective for both younger and older students. Our student teams move to a new Center after a 12-week term with the exception of the five-year-olds team who stay in the same Center all year. Here is a copy of our school schedule showing how our student teams move through the Centers (table C-1). The students are just returning from our first term break. The other handout is a list of the curriculum themes for this year (box C-1). Our primary program and our intermediate program are described in this chart.

All student work is directed toward the Center exhibition[9] which is listed at the end of the term. The whole community looks forward to these days, they are heralded in the local papers and, like parades or fairs, there is a strong feeling of community investment and pride. Local businesses provide resources and business partners join their students to see the end result of their educational help. These "events" are public portfolios of student work—and of the help provided by our community. The students are motivated to do well because their friends and neighbors and online partners will see their work. Parents <u>see</u> what takes place in their school and they are encouraged to evaluate what they see. I wish you could be here for an exhibition. They are a very impressive demonstration of community support as well as an implicit forum of parent education.

Quality Review Panelist: Do all district schools have the same themes at the same time?

Nancy Broyles: No, we rotate the themes. Some repeat on a three-year cycle, others have similar form but take different content each time. This helps with our use of school and community resources. We usually share themes with two other schools each year. This means that community partners like our Pacific Aquarium or the An-

thropology Center can contribute on a regular basis to two different schools each year supporting all of our schools equally. Books, CD's and other learning materials move across schools. This means there is a less need for duplication of materials. We have almost all of our educational materials in constant use at one of the schools so we need less room for storing materials. Teachers work together across schools to coordinate and share resources and experiences.

All teachers help in planning the overall design of the learning environments in the Centers. But there are different roles. Each Center has a curriculum coordinator for the humanities and language arts strand and one for the science, technology and math strand. They are "content" experts who coordinate the local and distant resources for designing Center activities. "Team" teachers and learning guides stay with the same group of students all year, moving with them to each Center. They work closely with students and bring a strong knowledge of "student skills and interests" to the collaborative planning. Other teachers are "resource" teachers, who can provide special work in a particular area or for a particular group, for example, bilingual or technology resources. Planning the Learning Center environment means coordination of expertise in academic disciplines, knowledge of the student team, and integration of resources. But now it's time to see how this works in practice. School is about to start.

VISIT TO THE OCEANS LEARNING CENTER

Your group walks from the school planning office down an outdoor walkway past the school-yard full of the noise of kids finding each other and their early morning activities. Nancy offers to take those who are visiting the primary program. Barb leads the rest of the group. You are reviewing the intermediate program and will visit the Oceans

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[9] These school exhibitions help make the school the center of the community and learning a valued activity. Students contribute to the community by creating these evolving museums. The term "exhibition" comes from Ted Sizer's book: Sizer, T., (1992), Horace's School, Boston, Mass: Houghton Mifflin, which has influenced many of my ideas on school reform.

TABLE C-1: Central School Schedule, 2005-2006

Sept. 5-9	**Team Orientation Week**
	Student skill assessment
Sept. 12-Dec. 16	**Term 1 (12 weeks)**
Sept. 12	Term 1 begins
Oct. 10	Columbus Day
Oct. 24-28	Half Term Break (one week)
Nov. 24-25	Thanksgiving Break
Dec. 9	Term 1 ends
Dec. 11-Jan. 2	Term Break (2 weeks), plus one-week holiday
Dec. 10, 12	Exhibition Days
	Total Center Instruction Days = 57 days
Jan. 3-Mar. 30	**Term 2 (12 weeks)**
Jan 3	Term 2 begins
Jan 16	Martin Luther King Day
Feb 13-17	Half Term Break (one week)
Mar. 30	Term 2 ends
Apr. 4-14	Term Break (2 weeks)
April 1, 3	Exhibition Days
	Total Center Instruction Days = 58 days
Apr. 17-July 14	**Term 3 (12 weeks)**
Apr. 17	Term 3 begins
May 29-June 2	Term Break (one week)
July 4-5	Independence Break
July 14	Term 3 ends
July 15, 17	Exhibition Days
	Total Center Instruction Days = 58
July 16-20	School Reflection and End of Year Activities

School year:
173 days of Center Instruction
5 days of Orientation and Assessment
6 days of Student Exhibitions
3 *days of Reelection & End of Year*
186 days of school for students

Learning Centers\Terms	Term 1 Sept.-Dee.	Term 2 Jan.-Mar.	Term 3 Apr.-July
Entry Program			
Tadpole Center		—Team K all year—	
Primary Program			
The Lands Learning Center	Team P-1	Team P-2	Team P-3
The People Learning Center	Team P-2	Team P-3	Team P-1
Our Imagination Learning Center	Team P-3	Team P-1	Team P-2
Intermediate Program			
The Oceans Learning Center	Team I-l	Team I-2	Team I-3
Time Machine Learning Center	Team I-2	Team I-3	Team I-1
Inner & Outer Space Learning Center	Team I-3	Team I-l	Team I-2

BOX C–1: Curriculum Themes

Primary Program Center Themes

The Lands Learning Center In this theme, students explore the different continents, regions, and states, climate and weather patterns, creatures big and small, plants and food cycles, energy, adaptations, transportation, and communication. Many of the Center activities are drawn from the theme curriculum of the National Council for Geographic Education.

The People Learning Center: This theme looks at the organization of people into families and societies They look at how different geographic regions result in different adaptations with respect to food, clothing, family structures, health, and issues of local and regional security. Students will be connected to people in very different living conditions throughout the world, including students who live in homes dug under the ground in the desert heat of Copper Pedy, Australia.

Our Imagination Learning Center: This theme celebrates our ability to think and write about things that "might be" or "might have been"—the idea is to explore ideas that stretch reality. The work in this Center includes a comparison of games and toys used by students' parents with those that are popular with students today. Students will read, write, direct, create and produce. An accomplished poet and artist will help students create images to extend the present into the future.

The Intermediate Program Center Themes

The Oceans Learning Center: This theme focuses on all forms of animal and plant life in our oceans, from the kelp beds to the whales, from the depths of the ocean to the shallow waters of the wetlands and marshes Students will become partners in local environmental projects concerning the preservation of the Batiquitos and San Elijo Lagoons.

The Time Machine Learning Center: Time Machine is a journey through time. The students and teachers will identify a number of places and times to visit and transform the classroom appropriately. Students will research these periods and then act in the role of characters and customs of the past, For the Egyptian period, papyrus is currently growing in our school garden so that students can make papyrus rolls for keeping records.

Inner & Outer Space Learning Center: This theme takes students from microscopic cells mostly inside the human body to the very large expanse of the universe. The work in this Center will include discussions of major systems within the human body including reproduction. Students will also examine systems of planets and stars m space. The students will be working with partner scientists from the Space and Science Museum.

Learning Center. You wonder how it is possible for kids of such different ages to work together in one setting.

Barb Milner: This brightly colored area is the Tadpole Center. It is for the five-year-old students. In this first year, teachers focus on getting to know the students and assessing their skills and their interests. In this first year the students remain in the same Center all year. It is a transition year when students are able to seethe structure of elementary school from the comfort of an environment similar to their early childhood experiences.

Two of your team members leave to review this program. As you walk to the other Centers, Barb describes the buildings.

Barb Milner: You will notice that the buildings are not new. We wish we could have started over with a brand new school, but we did not have that luxury. Our school was built during the middle of the last century. The classrooms were well constructed and earthquake-safe so we had to work with the constraints of the old building. As you can see, they are rectangular rooms built along corridors.
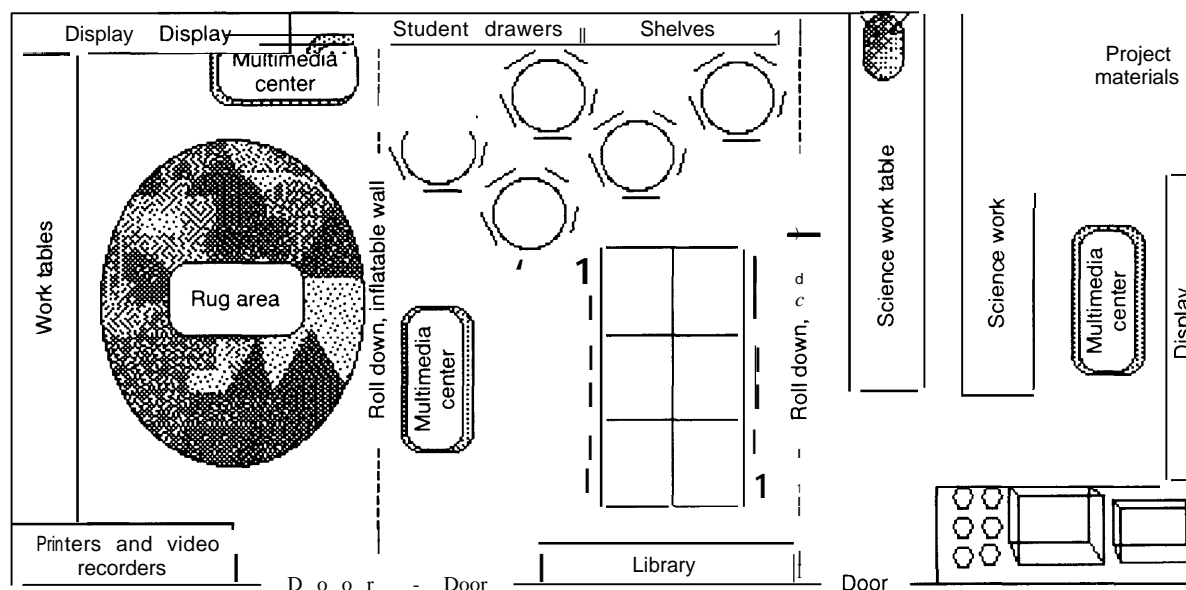
When we were planning for our Charter District, we wanted flexible learning spaces—places for small group discussions, for project work, and for large group presentations and demonstrations. The auditorium was not very close to classrooms and it served as the lunch room on rainy days, so it was not a great place for computer equipment. We were stuck on the idea of groups of students in an auditorium with a large presentation system. But as display systems became less expensive, we realized that a number of smaller monitors around a common space was a better solution. This shifted our thinking. Instead of trying to construct a large place to move to when needed, we just took out the connecting walls between three classrooms and created a Learning Center of flexible dimensions. We replaced the permanent walls with those wonderful new inflatable walls that roll down from the ceiling. Have you seen them? Lots of hotels have them for conference rooms. They are strong enough to lean on but they can disappear almost completely. And the new sound-proof covering is perfect for when we need more quiet spaces.

This area is for the intermediate Centers including the Oceans Learning Center. The intermediate teams are made up of roughly equal numbers of 9-, 10-, and 1 l-year-old students. This team is returning from an inter-term break of one week.

They will have six more weeks to complete their Center work.

As you approach the classroom, you can see that only the door to the Center room is open and that a few students have paused in the doorway watching you. As you approach, a gregarious boy offers a greeting.

Michael: Hello Dr. Milner! Are these the visitors you told us about?

Barb Milner: Yes, are you going into your Learning Center? Maybe we can follow you.

Michael: Sure, I'm Michael and this is my friend Rio. We'll be happy to show you around.

You *follow Michael and Rio into a very large room (see diagram above). At the right end of the room there are two large tables with trays containing science tools and microscopes with video display monitors connected to them. There are sinks built into each of the tables and some pans of water connected by tubes. Near the front windows are rows of plants with labels, There are a three or four kids watching the fish in a large aquarium. Another smaller aquarium has marsh plants. In the corner of the room are several large cardboard boxes, partially completed signs, and other project materials.*

Directly in front of you is one of the three porta- ble multimedia computer carts and an assortment of tables. The rectangular ones have been grouped together to provide seating for 16 students. There are four students intently working with laptop computers. Off to the side are round tables where a small group of students are working with paper and props. From the ceiling are stuffed paper scale models of whales, dolphins, sharks, and oth- er much smaller sea animals. Along the side are shelves with an assortment of writing and art sup- plies, including a large row of graph paper and about a dozen calculators, some partially completed dolphins, and meter sticks. There are students taking things out of brightly colored drawers labeled with student names. In the front left corner of the center are two printers and a vid- eo tape deck. There is a small group of kids scan- ning pages that are coming out of a printer. To the right of the door you just entered is a library area with books and magazines, CDs and other re- sources.

At the left end of the Center is an open area with a brightly colored circular rug. There are kids, some with computers, sitting on the rug with back- packs thrown to the side. At one end of the rug there is another multimedia computer cart. Along the wall is a long cabinet with a work-top.

Everywhere there are pictures and murals of fish, penguins, kelp forests and ocean robotics. At various places there are monitors mounted from the ceiling or on the walls. Throughout the Center about 35 kids work in small groups or alone. The printer is humming and the overall feeling is one of respect for the work of kids.

Quality Review Panelist: Why are you coming into the classroom before the bell rings?

Michael: I like to see if I got any personal mail. Most of us have computers at home, but, like with me, my older brothers never let me have anytime. If we finish our project work in class, sometimes there is time to check mail. But sometimes I get too much mail. Lots of us get to school early and we can come in when we want.

Rio: I'm here now because my group-see them over there—we're working on our performance for the exhibition. We are writing a play and we had some new ideas to change it, so we decided to meet before school to get more time. I better check in—I think I'm late.

Rio goes past the multimedia computer cart and turns to see his image appear on the screen. He types a few keystrokes, glances at the screen, and joins his group. Michael tells you that Rio has just checked in. You watch Michael flash a grin to- wards the small camera over the computer and type The computer returns with:

Welcome to the Oceans Learning Center, Michael. You are in Mr. Phillips' discussion this morning, then you have time to work with your distant partners on the wetlands project.

push return for more. . .

Michael: This computer lets the office know I'm here, and it tells us where we are supposed to go or what to do if we forget. But I already know what I am doing.

Quality Review Panelist: What if you type in the wrong code?

Michael: If the code doesn't match your picture, like, if you look into the camera instead of me (Mi- chael leans to the side of the computer and types mml1), see what happens?

I am sorry I didn't recognize you. Will you please type your name.

Name:

See, it didn't work. We have to make sure we are signed in. That's our job.

Michael opens the cabinet below the computer and pulls one of the notebook computers out of the recharging unit while Barb continues the descrip- tion of the attendance procedure.

Barb Milner: After the second bell rings, the computer displays pictures and names of any children who have not completed this check in. The guide or teacher only has to doublecheck for the missing kids and the attendance process is complete.

A round-faced, middle-aged man has left a group of students and is approaching you.

Carl Side: Welcome to the Oceans Center! I heard you might be visiting our Center this morning. Dave Brott asked me to tell you that he will be here soon to talk with you. Please look around and I will be happy to answer any questions. until he arrives.

Barb leaves you with Carl to meet the two center teachers, Noel Phillips and Marilyn Quinsay, and team teacher Dave Brott.

Carl Side: As you can see, some kids are still outside, others have checked in. I like to open the room as soon as I get here because I like the kids to see this as their space. They know the rules; if they are too rowdy, I just ask them to leave until the bell rings. It works OK. The students only have five more weeks until their exhibition and they are very excited about it. You can see their projects taking shape all over the Center.

Quality Review Panelist: What are they doing over there with all those tubes and pans?

Carl Side: The kids are experimenting with different ways to convert salt water to fresh water. And next to it are plants that can tolerate some salt in the water. One group of students is trying to figure out what properties make it possible for a plant to live in salt water and what happens to plants as the amount of salt in the water changes. That is why some of those plants don't look so great. These experiments are supervised by Dr. Hugo from the university. See the tall girl with the pony tail, that's Merica. Her group is doing the first part of a genetics experiment that will be continued all year by each of the teams. Over there, Rio's group is working on a play. See Vincent and Tamar? They wrote the play and are directing the younger kids, including Rio, whom I think you met.

Michael, seeing that your attention shifted to adult conversation, took the notebook computer to the nearest table and was now reading the screen. You wander over to see what he is doing. He has logged on to the server and is checking his mail. You apologize for the distraction and ask him to explain what he is doing.

Michael: I am checking my personal mail. You can't read personal messages during class time. See, here are project messages and this is my mail slot. During Center time, my personal mailbox won't open. I have to read mail before or after school or during our free times.

You ask Michael about the messages listed.

I am working with one of the biologists at the San Elijo Lagoon. They are creating preserves for the California least tern and the western snowy plover. Look, here are their pictures. Rio and I did some observation shifts at the site with binoculars over the break. See, we sent a message to Dr. Cooper recording our observations, but he hasn't written back yet. There are more birds coming now that their nests have been restored. We are studying wetlands, oceans and lagoons, you know, water, with kids in other places. But in my personal mail slot there are messages from kids. I have been sharing game hints with a guy in Alaska.

You leave Michael reading a message marked "Yea!!! Trek gold finally found" to see what other students are doing. Within a short time, a bell rings outside and the room fills with students who move through the Center with a sense of purpose. There are now more than 20 kids on the rug on the west side and Carl is reminding them that they need to keep their voices down. Mr. Phillips enters from the west side of the Center. Carl quickly introduces each of you. You learn that Mr. Phillips, one of Ocean Center's two curriculum coordinators, oversees the Humanities and Performing Arts strand.

Noel Phillips: Hello, welcome to our Center. I hope you had some time to look around. Did you see any of the student projects? If you get a chance, you should ask Tera's group to show you their multimedia display of the effect of the moon on

the tides. They are doing a great job. They can also show you what would happen to the earth if the moon wasn't there. It is a pretty impressive presentation of their understanding. What I find so exciting about multi-media is not the presentations, but the fact that kids can work with their own understandings by creating their own movies, presentation and programs.[10]

Today, we're going to have one of our "big ideas" discussions. The students know that the whales will soon be visible off the coast. The question is—"Why do whales migrate instead of hibernate like bears?" Students have been asked to come with their hypothesis about why whales migrate, what factors would increase or decrease the whale migration, and why they don't hibernate. Students have time to explore the topic before we have a discussion. I encourage them to talk with parents or try to find resources in the NetWorld or from print or people resources. Then we share what we found out and what we think. The younger kids often ask the type of questions that push all of us to really understand the issue. To help answer tough questions, I check the National Teacher Online Resource List. You probably know about it; companies or businesses donate a few hours of employee time to respond to teacher questions. I found an email address of a research team at Scripps that will respond to teacher questions.[11] I can generally find someone who can

help in any area. If you will excuse me, I have to get started. I just saw Dave in the office. He is the team teacher for these kids, and he said he will be on his way over in a few minutes.

Mr. Phillips walks to the far side of the Center and picks up a conch shell and blows into it. More students move to the rug area. He glances at the computer and sees that Ricky and Kalani are missing. Kalani's picture is dim which means her parents have already called in. No one has seen Ricky, so he pushes return and attendance is over. A programmed call is placed to Ricky's parents.

Reaching to the wall, Mr. Phillips flips a switch. There is a mechanical whir and what looks like a carpet roll drops slowly from the ceiling. It unwinds like a large projection screen until it reaches the ground separating the circle area from the rest of the Center. Then it slowly inflates to become a rigid wall, leaving only a small doorway. The sight and sounds of the student group are gone and the Center becomes smaller.

Meanwhile, on your side of the new wall, students are collecting small packs from one of the closets and talking about who will take what. Some kids are arguing about where the nets are, who gets to take the Batiquitos Lagoon CD guides, and which micro-sensors will need to be taken. Within a few minutes another teacher appears, checks the computer screen, and finds all

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[10] Recently George Lucas, renowned movie director, testified before the U.S. House of Representatives Subcommittee on Telecommunications and Finance on his ideas about reaching for a technology-enriched educational system of the future which he calls "Edutopia." He is producing several movies set in the future that will provoke teachers and student to envision the use of the multimedia tools in new ways. But the central thesis of this paper is that the construction of a vision and the work to implement it will need to be repeated by the students, teachers, and school leaders in each school. It is in the design process that is critical in constructing school reform. The George Lucas Educational Foundation (Box 3494, San Rafael, CA 94912) publishes information leading toward his vision in a newsletter called Edutopia. There is no cost for a subscription and it can also be found online (Gopher: glef.org; http://glef.org).

[11] There are many projects that are working on finding ways to connect subject matter experts to schools are resources. In the Passport to Knowledge project, on which I am currently working, television and telcomputing are used in parallel to take kids on electronic trips to remote "fields" of science. One component to these field trips is that the scientists agree to respect to questions that students have with responent to their scientific work. Trevor Owen has created "Electronic Writers in Residence" which connects professional writers with students through computer links to help them develop their voice through writing. Judi Harris, from the University of Texas in Austin, has been designing a project "Electronic Emissary" in which subject matter experts are matched with classrooms where there is interest in a specific area of expertise. Using the computer, these outside experts become both teachers and learners as they work electronically with students who share their interest. Recently on the Internet, research groups have offered services to schools like "Ask a Geologist" to field questions that student or teachers may have on issues related to the Earth. Similarly, a university professor has organized his students to provide an "Ask a Mathematician" service.

her students have checked in. Marilyn Quinsay is introduced as the Ocean Center math and science coordinator. After a quick round of introductions, she turns to her students.

Marilyn Quinsay: I assume that all of you have your data recorders, any micro-sensors you need, and your sketch pads. Your group should have a camera, binoculars, and their guides. The group leaders should have the data recorders and the youngest member should take the binoculars. (Then, turning back once more to the visitors). Too bad you don't have time to join us on our field trip, but I hope that you enjoy your visit.

About 16 students kids leave the room in groups of 3-5 students. Marilyn waves goodbye and reminds you that you will have time to talk later. This leaves a group of about 25 kids working around the different areas of the room. Carl makes the last check of the attendance chart, looks around the room, and then comes back to talk with you.

Carl Side: You just met our two Ocean Center curriculum coordinators. Let me show you around. The room to the right is our "lab," this central area has mostly tables and chairs, and the discussion room is now hidden by the wall. Teachers can decide which space is best for the type of lessons they teach. Inflatable walls make it easy to divide the space. The six ceiling-mounted monitors have replaced blackboards and display what is on the screen of the multimedia Center. If we have the whole group lesson, we separate these rectangular tables for more seats and use the circle tables and rug area. The teacher stands over there by the multimedia cart. The monitors make it easy for each student to see without crowding. If some students are not participating in the lesson, we can separate off the science lab area and they can work with me. The three multimedia computers are portable and can be moved wherever they are needed.

Quality Review Panelist: What are the rest of the students doing?

Carl Side: Different things. These kids over here are creating their own designs for desalination. And this group is examining a colony of fairy shrimp, a species that has recently made a dramat-

ic comeback now that we are preserving more of the wetlands. (Looking toward a student standing alone at one of the tables and raising his voice slightly)—Eric, you need to use this time productively. (Turning back to you)—Sorry. They are following the work of scientists involved in restoring the Batiquitos and San Elijo Lagoons. Some students are working on individual learning contracts. Oh, perfect, here comes Dave Brott, he can answer your questions. I need to get back to the students.

Carl introduces you and then moves over to Eric's group. Dave explains the roles of the center staff.

Dave Brott: I'm not sure how much you heard about how we divide up responsibilities. I am the team teacher for all of the kids at this Center. Carl and I stay with this group evaluating their performance in different learning contexts and across Centers. We work with the Center teachers, who spend all year in the same Center organizing the curriculum and making project options available. Marilyn and Noel coordinate the participation of other teachers and outside experts both online and those that come to the Oceans Center. They are the "content experts" making sure that we have the intellectual resources to expand on and extend the academic interests of our students. But the trade-off is that they have fewer opportunities to observe student performance across settings. On the other hand, as the team teacher, I watch student performance across settings and find ways to encourage or motivate the students to take advantage of different learning opportunities in each Center. Together we provide a good balance between a rich learning environment and a personal connection with each students.

Dave gives a quick overview of the Center activities for the day and then the discussion turns to issues of student assessment. You want to know how learning is assessed.

Dave Brott: Assessment is what concerns most people when they see kids involved in group projects, especially kids of different ages. We have spent a good deal of time talking about *why and*

what we assess. The result of our discussion is a different *process* of assessment.[12] The functions of student assessment are complex and some functions conflicted with our goal of promoting life-long learning. We don't use assessment to sort students according to their "intellectual skill." We create multi-age groupings to avoid tracking students for success or failure at very early ages. Grades were used in the past to motivate students by creating an external reward. Extrinsic rewards are not effective and this can be seen by the fact that parents often had to find additional extrinsic rewards or bribes to motivate their children. Low grades can be very destructive. We find that creating a museum exhibit that is enjoyed by the community and provides more intrinsic motivation to learn. We think it is important for all of us, students and teachers, to know how we are doing. We try to encourage a sense of self-improvement through learning that we hope will become a life-long habit.

Our past methods of assessment involved using student memory for content information to index learning. It was an easy but inaccurate measure. Now we use the intersection of three measures to assess student learning: self-assessment, community comments, and teacher feedback. Student performance on national standardized tests is used as feedback to the teachers.

So let me explain the process of student assessment. At the end of every session, the students spend time reflecting on their work as they get ready for the exhibition. They select their best work to display in the exhibition. But they also have to see how they measured up to the goals they set for themselves. I help them set realistic goals and then we all work to help them achieve the goals. So the first form of evaluation is the student's written reflection on their accomplishments and success in reaching the goals they set.

The exhibition provides a time for parents and community members to see what students have accomplished. Parents can see how their child's work compares with that of children of different ages and abilities. The exhibition provides students an opportunity to teach their parents. We ask our visitors to comment on what they see in the Center and to compare it to their expectations for learning. These Center assessments often provide a view into the work accomplished outside of school, in homes, and in the community.

The final measure is a "process" report from the Center teachers. Here is where technology has played an important role by providing an efficient way for our team to make, store, and share observations about students. Did you notice the clipboard that Carl was carrying? We all have one. See the microcodes by student names on this clip board? As I notice things while they are working, I make notes that are automatically added to their computer file. For example, from here I can see that Patrick and Kerwin are working on the measurement of a blue whale. Patrick is using the ruler and calculator with ease and finding the length and converting it to the scale we are using. He is also explaining it to Kerwin who is attending, but not making any of the measurements himself. So, I use this touch screen to scan Patrick's code, then the project name "fish scale," and then the code that describes his behavior. I can do the same thing for Kerwin. I can develop my own system of "benchmark" codes for different aspects of the tasks from academic to interpersonal issues. If I want to add a new comment, I touch here and then go to one of the Center multimedia stations and type the comment. If I touch a group code, the comment goes to each student's file as well as to the group file. Because the comments are codes, the students cannot see or tell from this sheet what notations I am making. This keeps the system very private. In fact, if I hand this to you, you will not be able to enter anything as I have to scan this microcode on my ring to use it.

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[12] For more information of function of grading, see A. Kohn, (1994) "Grading: The Issue is not How but Why," *Educational Leadership* vol. 52, No. 2, 1994, pp. 38-41.

All of us have these clipboards but we don't use them all of the time. However, when we see something that we want to share with the team, this is an easy and efficient way to do it. Because of the ease of representation, we can use the information in many different ways. Marilyn might search for all comments that are related to the measurement task and look to see if a task is appropriate for an age group. I spend more time reviewing individual student profiles across different Center activities.

An advantage of this system is that any of us can note patterns among the comments. For example, if I notice that there are more comments about either boys or girls in one area, I can alert others and we make a point of watching the other group more closely. In the past, at report card time, there were always some kids who just slipped through the system because they escaped the notice of overworked teachers. Every week a printout identifies kids who have the least comments in an area and we all make a special effort to watch these students more carefully. We all try to make student observations as they happen because we know how quickly memory fades.

All student records are stored on the computer. You saw the kids check in. Their daily schedule is on the computer. Did you know that parents with access to the NetWorld can access their child's school schedule from their computers at work? This way they are better able to ask questions or follow the work of their child in school. If a child is giving a special report at school or practicing a performance, we sometimes have a parent who wants to watch from work. We can focus these small cameras on the students and parents can watch. Of course not all parents have this flexibility or access. Students can also bring tapes from home and make a copy so that parents can watch their child's speech or presentation later. These performances demonstrate student skills.

Quality Review Panelist: Does this mean that the parents can see the comments that you and the other teachers make about their child?

Dave Brott: No, not in real time as we make them, but eventually they will see a summary "process report" at the end of the term. I take all of the observations that are made on a student and organize them into a report card. I can display the frequency of different comments and create a picture of student strengths and weaknesses. Most of the time, comments across teachers are similar and I just create the report. But sometimes they are very different. For example, one teacher might appreciate the creative skill in humor, while another might define the behavior as disruptive. We meet as a group and come to a consensus on how to present these abilities. The process reports together with the exhibitions of student work give parents a clear picture of their child's school performance.

Each term, I compare process reports with student self-assessments. If they match, then we work out a set of goals and perhaps a personal contract for some work to be accomplished during the next session. If they are not in line, then I call for a parent/teacher/student conference to arrive at a common understanding of expectations and behavior. Students who are doing well have more freedom to explore areas they find of interest. In some ways, students earn their intellectual freedom. Giving students more responsibility for their learning seems to be the key that changed students. We seem to have many more "gifted" students than we did in the past.

School assessment takes place in the first part of September when we compare our students with students from around the nation on the National Standards Assessment Tasks.[13] You will be able to see these scores later in the office. Our students score very well in these tasks as the learning center structure help them take knowledge learned in one

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[13] These don't exist now but I believe they are a reasonable projection from the current debate and work on creating National Standards. For more information see National Council on Educational Standards and Testing, *Raising Standards for American Education*, (Washington DC: U.S. Government Printing Office 1992.

setting and apply it other settins. The teachers use these scores to identify areas of concentration.

You and your team member move around the room reading the reports on the wall and looking over the shoulders of students. Most children are working on projects but some students are working with computer programs that look like math and language games. You ask one student what she is doing.

Student: I am practicing math facts—mostly times tables. I guess I take too long to figure things out, so Mr. Brott wants me to see if I can improve my speed. We can invent our own ways to solve math problems and I am real good at that, but Mr. Brott says I will be even better if I know these by heart. My personal goal is to get to under 11 minutes a race. I think these computer race car games are dumb, but I just broke 12 minutes so I think I will be fast enough soon, then I can get back to work on my project.

You watch for a few minutes, thank the student, and continue through the Center. Mary Stanley, the computer expert, enters the room and goes over to the multimedia computer in the lab area. She asks the students if they are prepared for their teleconference, reminding them that Dr. Noorg is volunteering to help and they need to take advantage of this opportunity. She opens the conferencing program and exchanges a few words with Dr. Noorg and then leaves. You can hear Dr. Noorg telling students that over 92 percent of the salt water marshes on the West Coast have been destroyed and encouraging them to see their work as helping to understand how to preserve these areas. Then a student from Oregon asks Dr. Noorg a question about the data they have collected. Soon one of the Oceans Center students is summarizing their work. Carl has moved nearby, available but not intrusive. Interested in the topic, you stay here for some time listening to Dr. Noorg and the student groups.

Your attention is pulled away by students coming through the small door in the temporary wall. Mr. Phillips is organizing students into small groups at the round tables with some materials. Within a few minutes another teacher enters and says something in Spanish and a dozen or so students follow this teacher into the discussion area where Mr. Phillips had been working earlier. But your attention is diverted by a low whistle from a student working with notebook computer. You want to know what he is doing.

Student: I am reading the research journals from Paul Smith, who is in Antarctica. He didn't send a message last week because they were lost on the ice for three days before they were rescued, sounded pretty scary. Now they are stuck in another storm. I'm glad I can do my ocean work in the classroom! [14]

Leaning over, you read the screen:

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[14]This is part of a much longer message by Paul Smith shared on the Passport to Knowledge, "Live from Antarctica" electronic field trip. The students were able to follow researchers, pilots, weather forecasters, camera crew, a teacher, a 17-year-old student, as well as others as they set foot on the distant continent of Antarctica and began their explorations and work.

> Last week I went south to Robbo's and had a fantastic time quadding around the islands. We climbed through icebergs, said hello to Weddel seals, climbed up to Opaque Lake (so called because the water is full of penguin waste) and laid hands on the Vanderford Glacier without an enormous chunk breaking off and squashing us. There are about 13 islands down that way and although we didn't get to all of them we covered a lot of ground. One place I'd like to go back to is Herring Island where the seals come to give birth in October. As is so often said about Antarctic weather-beautiful one day, really horrid the next--we were stuck in Robbo's hut for the next day with the strongest blizz recorded this year blowing outside. Angie read the hut log and found out how, in its early days, it had a tendency to snap guy ropes and move the hut several meters. It didn't this time but not for lack of trying on the weather's part. i thought I'd just open the door quickly and peek out. Bad move. Sort of like getting all your daily fresh air in about two seconds, plus a shower once the snow's finished melting..

Push RETURN

At that momenta small boxed message appears at the bottom of the screen from the school office.

> Ms. Johnson, our parent/artist, will be here **in** five minutes to help students with the ocean mural. Those involved should finish up their work, log off, and gather their materials.

At the same time, Barb Milner returns to the Center and explains that for the next hour the students will all be in skill clinics of different types. This is the time when almost all teachers are in the Centers working with groups of students. You again raise the issue of differential skill levels and ask how this works.

Barb Milner: Using the assessment profiles from the beginning of the school year, students have areas of concentration identified. These can be areas of student expertise or areas of weaknesses.

Students have individual goals and the skill clinics are organized to help students in these special areas. The composition of these groups is one of the continual topics of teacher discussion in our staff meetings. There is no perfect formula for balancing the comfort level of learners in homogeneous groupings with the challenge that comes from working with heterogeneous groups. Each group of Center and team teachers tackle skill clinics in their own way.

You stay and watch the lessons until Barb indicates it is time to visit the business complex. You would have enjoyed more time in the Center, but you also want to find out how this district made the transformation from the traditional hierarchy to this collaborative arrangement. You are intrigued by teachers who move in and out of the classroom so easily. One of your questions is how teacher unions and job protection issues are handled in this new arrangement. You follow Barb toward a modern structure of wood and glass as she describes its history. The other members of your panel are already there.

VISIT TO THE DISTRICT/SCHOOL OFFICES

Barb Milner: A professional career path for teachers necessitates a place of work other than a classroom or Center. So, we did some creative thinking and eventually sold the district offices. With some help from a bond passed by the community, we were able to build a smaller office site at each of the eight schools in the district. You saw the school planning office and the school secretary in our earlier meeting, but now I want you to see the rest of the office complex.

On the other side of the school planning office is a medium size office and a small workroom with office equipment, file drawers, and some video and electronic equipment including a large Silicon Image system. You meet Alan who is the office/ district manager at Central. He works directly for Josie and handles district records. He introduces you to several other people working in the office.

Alan says they are mostly supported by grants and contracts held by mentor teachers.

You walk down a short hallway. To the right is a library conference room with a number of hardwood tables pushed together to form one large table and a set of padded office chairs. To the left you can see a lunch room with some people talking and waiting in front of a microwave. You walk past these rooms into a modern looking office complex divided into modular units. Room dividers create a number of different-size offices, some with doors open, others are closed. You are curious about who gets larger or smaller offices.

Barb Milner: (laughs) Well, it isn't always the easiest decision and it changes from year to year, but we try to be as fair as possible. Sometimes mentor teachers prefer to share a larger space among two or even three teachers because they are not here all the time. In some cases they are working on the same project, other times they are just friends who find it easy to share a large space. Other teachers would rather have a small space to themselves. Another factor is the nature of a project. For example, Marilyn Quinsay is working on a math multimedia program for Educational Designs. You may have noticed the Silicon Imaging System in the workroom? She uses a range of different tools that take up space so we give her more room. Her work makes it possible for us to have new equipment. We are getting a new touch screen system for the Center as a result of her contract. She is working with a national team of teachers and students to develop a multimedia theme-based curriculum. With the Silicon System, we can use the Custom Courseware Service to design and print classroom materials as we need them.

Quality Review Panelist: But who makes the decisions about office space?

Barb Milner: The actual decision is made by the teachers in our school management meetings. We meet face-to-face during each term break to make decisions that relate to teaching and working. But we have online interaction all of the time. We believe that teachers must have the responsibility for making the decisions that affect them. This is the way we deal with most issues of limited resources in our district.

Quality Review Panelist: Since you mention limited resources, I notice that some desks have computers, others don't. How does this work?

Barb Milner: Just like you saw in the Center, the notebook computers are charging *here (she opens the cabinet under a multimedia computer similar to the one in the Learning Center)*. All teachers have their own private "card" drives, and of course space on the office network. But these notebook computers make it easy for us to share resources. Of course, we would love the new "Power Paper" computers with those "crystal image" screens, but we just don't have the funds to upgrade. I think it is the nature of schools to have to work with yesterday's technology but at least we have portable, cordless computers. During the heaviest use time, inter-term and term breaks, we borrow computers from the Centers.

Quality Review Panelist: Who works at those desks along the wall?

Barb Milner: Those open stations are primarily for the entry teachers. Since they spend almost all day in the Centers, they tend to keep their work and materials in a Center desk. But these open stations provide a quick place for anyone to check mail or type a letter.

Quality Review Panelist: I see phones. How many lines do you have and how do you account for phone use?

Barb Milner: There are phones on every desk, finally, but no, they are not private lines. In fact our limited budget still makes it necessary for teachers to have calling card codes and limits on the copy machine and printing supplies. The difference is that teachers set the limits and monitor themselves. When teachers get grants and contracts from different groups, they include indirect costs of 40 percent for phone, mail, and other office expenses. This is how we are able to maintain the office.

We are headed for the conference library to talk about staffing. Josie is waiting for us and I think

Table C-2: Teaching Positions			
Instructional Positions	**Academic Requirements**	**Average Time at this Level**	**Salary Range**
Learning Guides	■ 2-year College degree with a Learning Guide Certificate or B.A.	3-year renewable contracts, security of employment after second contract.	$20,000-$25,000/year $110/day
Entry Teacher	• B. A. and provisional teaching credential	Up to 5-year contract with tenure decision between years 2 to 5.	$25,000-$30,000/year $120/day
Mentor Teacher	■ Full teaching credential ■ Other certification or education will be necessary for some activities.	Advancement beyond a Mentor Teacher based on merit determined by peer-review process.	$32,000-$50,000+/year $175+Iday (unlimited)
Master Teacher	■ Administrative credential and usually graduate degrees	This is the top rank of educator.	$55,000+ $235+/day (unlimited)

she will have some information that will help you understand some of the things you have been seeing. I will be at the school planning office and will meet you there later.

You say goodbye to Barb as Josie welcomes *you. The topic of discussion is different roles, responsibility, and, most important, the costs of new staffing positions.*

∎ Teacher Roles and Salaries

Josie Rowe: I hope you enjoyed your visit to the Centers. Now we have more time to talk about the changes in the career path of teachers. There are two critical components that make our plan different than any that had been tried in the past. One is the use of para-professional learning guides and the other is the combining of outside resources with public funding. I am going to describe the teaching positions and pay scales (see table C-2).

Learning guides are para-professional positions. Learning guides don't require a great deal of academic preparation, but they need to have good skills in working with and motivating students. Basically we have two categories of people who are attracted to this position. Some young people

who are looking for a way to earn money between college and graduate school find organizing learning for students an enjoyable break from studying. Some are considering a career in teaching or feel that some experience working with kids will be a good way to prepare for their role as parents.

Then we have another group that is generally older, some have had teaching experience. To be very blunt, they are not interested in the intellectual challenges that face teachers in our career plan. They just enjoy working with kids. You met Carl, right? He is terrific with kids. They take to him like the Pied Piper. He wasn't great at organizing academic lessons, but he gave life lessons that students rarely forgot. In the past, he ended up with a class of the most difficult kids in the school because he was so good at reaching them. But this was unfair to Carl who was overworked, and it was unfair to the students who did not have the same learning opportunities of other students. We were creating a school within the school, segregating students and not providing all students the learning environments they needed.[15] Carl decided he would rather be a learning guide than a teacher. He finds the work fulfilling and enjoys the freedom after school and during term breaks.

[15] Education tracking of students is not a productive strategy. For more extensive discussion of this issue see J. Oakes, Adam Gamoran & Page (1992), Curriculum Differentiation: Opportunities, Outcomes and Meanings, In: Philip Jackson (Ed.) *Handbook of Research on Curriculum (New* York, NY: Macmillan, 1992). Also see H. Mehan, Understanding Inequality in Schools: The Contribution of Interpretive Studies, *The Sociology of Educational vol. 65, No. 1, 1992,* pp.1-20.

Learning guides work from September to mid-July. During the one-week half-term breaks, they have meetings and recordkeeping tasks, but they get the two-week period between terms off. Their salary works out to about $13 per hour. They open and close the centers each day. They are in the centers or on the playground seven hours a day with a 45-minute lunch and a 15-minute break. But they do not have to prepare lessons, write report cards, or work on weekends. They are the only group in our district that is still represented by traditional teacher unions. However we are all members of the recently evolved American Education Association (AEA). We believe this organization represents the transformation that we are working towards.[16]

Quality Review Panelist: How do you react to the criticism that you are de-skilling the role of teacher? What if you just kept increasing the time kids spent with learning guides versus teachers? Does this worry you?

Josie Rowe: Yes, this does worry us and we have spent many hours discussing this very issue. But we try to look at the whole picture. We wanted to arrive at a system that included those who wanted a fast entry into working with kids, but also provided a system of rewards, a career ladder that would attract talented men and women into the challenge of continually assessing and evolving the best possible educational system. There are many teachers in other school districts with less skill than our learning guides who work with students all year. We are trying to *increase* the level of skill by not losing talented teachers to other careers. Because job opportunities for women have expanded, it is important to create incentives to attract the level of teachers that we want in leadership roles in education. Remember that learning guides are not teachers. They are there to super-

vise learning. Without teachers, there is no learning to supervise.

Our teachers did an analysis of how they spent their time in the classroom. They found that they spent an average of two-thirds of their time teaching either whole group or small group lessons but that there were 20-minute periods throughout the day when students were doing group work or individual writing or reading. Children, unlike older learners, cannot be left without supervision. The learning guides provide this supervision. But maybe this will be more clear after I introduce our different levels of teachers. There are entry teachers, mentor teachers, and master teachers—and there are levels within each rank.

Quality Review Panelist: My concern is that the daily rate you list for the different ranks of teachers looks very low, but you list a high yearly salary. Can you explain this?

Josie Rowe: Entry teachers are beginning teachers. In practice, most have full credentials, but they can be hired with a provisional credential and finish their credential work while they teach. Entry teachers are expected to spend five or six hours a day with students in the Center and the rest of their time is spent working with Center or team teachers. Entry teachers are paid during term breaks like learning guides, and they are also paid during half term. Except for a day or so of supervising student exhibitions and attending team meetings, they can structure their time during term breaks, but the expectation is that they are working during this time. They do have some vacation time, one week at Christmas and one week during the summer, but the rest of the time they are learning. It is their time to develop an area of expertise. The difference between a learning guide and an entry teacher is in *time* rather than *money*. Entry teachers have much more time for

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[16] Trade unions were set up to protect the rights of workers from the abuses of management. Professional organizations are set up by members to set standards, control certification, regulate members and provide channels of communication. With a shift from teachers as workers to teachers as professionals should come a transformation of teacher unions to professional organizations. The American Education Association does not currently exist but represents this evolution that I believe is vital to educational change. The new organization suggests a shift to shared responsibility.

planning and for developing ties in the professional community of educators. It is these ties that will lead to professional work and pay.

The transition to a mentor teacher will be based on the productive use of this time. Over the first five years of teaching, entry teachers have almost a full year of professional development time. Entry teachers, like all teachers, have flexible control over their work. They can work in the school office complex, at a resource center or library, or at home. The normal career path has them come up for a tenure peer review in their fifth year. They are evaluated in a peer review process in terms of their teaching skills, their expertise in an area of their choice, and their service to the educational community. Entry teachers are encourage to develop professional ties but not to take on additional responsibilities outside of Center teaching. We believe it takes concentrated teaching for about three to four years to develop one's style as a teacher. Most entry teachers begin as "team teacher" because this gives them the opportunity to collaborate with three different sets of Center teachers over the year. While these new teachers are analyzing student learning, they are exposed to the teaching styles of our best teachers. This way they learn the skills both from center participation and observation. Team teachers prepare and teach lessons in close cooperation with center teachers.

Once a teacher has demonstrated good teaching skills, they are free to develop an area of expertise which will eventually lead to professional opportunities. We provide the time and encouragement for our teachers to pursue intellectual challenges outside of the Center. Since we did not have funds to pay teachers an increasingly higher salary for teaching, we have instead made it possible for them to essentially split a teaching position with other work in the educational community. We give teachers *time* to pursue intellectual challenges that we believe make them better teachers.

Quality Review Panelist: What counts as "an area of expertise" and how do teachers decide what to do in this professional development time?

Josie Rowe: That is a good question and some entry teachers find making that choice difficult because it is a new concept. But in our early discussions of what made someone an ideal teacher—remember, we talked about that this morning—we found that it wasn't the particular skill, like teaching writing, organizing innovative science labs, or integrating technology. It was more the very fact that these teachers had worked, often on their own time, to develop a strong passion for some way of improving education. It was this *process of learning*—not what they learned—that characterized our best teachers. So we wanted to develop a plan that would encourage teachers to be learners. And we wanted them to have a choice.

Of course, like most choices, the options available are somewhat constrained by economic realities and regional opportunities. The goal is to have this area of interest evolve into contractual work. If you decide to become a specialist in an area in which there is little need, such as a bilingual specialist in a language that is not spoken here, it is going to be more difficult to find work in this area. On the other hand, if there is grant money available for environmental science or district and state opportunities for bilingual Spanish/English specialists, developing expertise in these areas might make it easier to make the shift to a mentor teacher.

Mentor teacher positions are very different than traditional teaching positions. Mentor teachers are paid a slightly higher rate for classroom contact hours. But, again, the advancement to this level is a shift in the amount of time spent in the classroom. The expectation is that they will spend up to two-thirds of a day teaching. However the other one-third of their time is free for them to take on other tasks that are related to their developing area of expertise. These might be consulting contracts, district resource positions, foundations and government grants, or work at the university either in research or education. While teachers have written and received grants in the past, they have been largely for materials or salaries of other people. In our district, mentor teachers can write grants which include up to 50 percent of their salary.

If an entry teacher develops an area of expertise early and is awarded a grant or receives a contract,

he or she can ask to be reviewed for mentor status after two or more years of teaching. At the other end, an entry teacher must develop an area of expertise within seven years or they will not have their contract renewed. Basically, we are saying that teachers are professional learners who want the intellectual stimulation that comes from following personal interests.[17] We have taken a strong stance in this district. We don't think someone can be a good teacher if they are not learning.

Ben Barrel (who enters the library to hear the last comment): And similarly, we decided that all school leaders should be "master teachers" as well as master learners. This keeps the loop between leading, learning, and teaching closely aligned.

Josie Rowe: Hi, Ben, I'm glad you have time to join us. I am describing the steps from an entry level teacher to a mentor teacher and then maybe you could continue with a description of the process of becoming a master teacher.

Ben nods as Josie continues with the description of mentor teachers.

Josie Rowe: A mentor teacher is in the Center working with kids for three to four hours a day, some more, some less, depending on lots of factors. Some of our mentors provide services that were in the past district positions. Our resource teachers help identified students intensely during inter-term weeks and sometimes between terms. This way students who need extra help are not losing regular instruction for their special needs like speech or language.

A mentor teacher is guaranteed a minimal salary for teaching two-thirds of each of the school days and participating in the three exhibitions. This leaves almost half their time for work in other areas of education, and more than half of a year if they choose to work over summer break. All of these work arrangements must be submitted and approved through our contracts and grants office, but it provides an open-ended salary for teachers based on achievement. Each of our teachers can choose how hard they want to work. Some of our teachers work year round using the term breaks to work on many exciting projects. They earn salaries that are comparable to other professionals such as university professors, lawyers, high-level administrators. Our district benefits from these arrangements in three ways. One, and most important, our teachers are intellectually engaged in educational issues which often enrich Center teaching. Two, the outside employment covers office and other "overhead" expenses which support our office complex. And three, we rarely lose our "best" teachers to jobs outside of the classroom.

Our district has one of the best records in the nation for pulling in grant money. This is not surprising since we provide time and incentives for teachers to write grants. Some of our teachers are partially funded by grants—in fact you might have noticed the group in the Oceans Center working with the vernal pool fairy and tadpole shrimp. Their work is part of Center teacher Noel Phillips's grant from the Wildlife Federation. I think some of the highest-paid mentor teachers have contracts with publishers designing electronic materials for home as well as education markets. Since up to 50 percent of a mentor teacher's salary can be negotiated by the teacher with other organizations, a mentor teacher could, in theory, earn more money than a master teacher. However, I suspect that this level of recognition of skills would prompt a review process and an early advancement to master teacher level.

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[17] The professional development of teachers requires taking an active role in learning new ways of teaching. The change is more likely to happen if their professional development is linked to their career advancement in their chosen area of expertise. For more information on the multiple factors involved in professionalizing teaching, see W. Fireston & B. Bader, *Redesigning Teaching: Professionalism or Bureaucracy?* (Albany, NY: SUNY Press, 1992).

Quality Review Panelist: Is there an issue of travel? If teachers are working for people outside of your district, don't they have to travel to meetings?

Josie Rowe: While some of these projects involve travel, teleconferencing helps keep teachers on site most of the time. The rapid development in groupware has made it much easier for these teams and committees to work together. In fact, I personally feel more productive in online meetings, although I admit it is more fun to go and meet with people face-to-face. However, there is plenty of time between terms to arrange for travel.

I think I've said enough about mentor teachers, so I will stop and give Ben a chance to tell you how mentor teachers progress to master teachers. He might want to address the issue of travel as he has a 50-percent contract with a curriculum committee at the State Department of Education.

Ben Barrel: Travel is not a problem as most of my work is done online. In fact, most meetings are at conferences that I would probably go to anyway. But let me describe the master teacher position. The plan we have in place says that after five years of teaching as a mentor teacher, a teacher can request or be recommended for a peer review for the position of master teacher. Some teachers may not be ready after five years and that is fine. A mentor teacher can stay a mentor teacher for as long as he or she wishes. There is no pressure for all mentor teachers to be master teachers. Being a master teacher is a way to reduce teaching responsibilities to provide more time to pursue leadership roles in a wide range of educational settings.

You have to be at the rank of master teacher to be a member of the principal or superintendent teams. But master teachers don't have to be administrators. Because of the way we started, currently most master teachers have either principal or superintendent positions. But this year that will start to change. For example, Marilyn Quinsay is up for review. She has developed an international reputation as one of the leading developers of multimedia programs and she wants more time to work on this.

In the past, teachers such as Marilyn would have left teaching for the prestige and financial rewards of developing new materials. We give them the option to stay connected and involved with students. That is what I like about our plan. But I do have a concern. I am worried that if all teachers stay in education and become master teachers the work in the Center might become too fragmented. Right now we have an ideal mix of learning guides and entry, mentor and master teachers and things are working better than I ever expected. But I hope that this system will be able to develop along with teacher advancement.

Josie Rowe: Ben, you missed our discussion of learning guides and concerns of de-skilling the role of teaching. But I know these issues concern you.

Ben Barrel: Yes, we are charting new territory and it is difficult to see into the future. But we are hopeful that the creation of the Teacher Senate and the increased income to the school from master teachers will be one of the resources that gives us more flexibility in dealing with problems as they arise. The system is not fixed. We know that change is part of the plan and we are hoping that our new collaborative structure will be open enough to design this change. The excitement of our teachers in having control of their lives in the Teacher Senate is big step forward.

Quality Review Panelist: Well, I want to know how this system compares in cost to the more traditional plan of having one teacher for 30 kids. I can see that there are some savings with learning guides, but how many teachers do you have and what is the pricetag of your payroll? How is teacher-student ratio computed?

Josie Rowe: I have prepared a chart so that you can see how the number of teachers has shifted at this school. In 1995, we had about 30 students in a classroom with a total of 18 teachers

Traditional Model (1994)		
Beginning teachers	**Midrange teachers**	**Highest teachers**
3 full-time	4 full-time	11 full-time
3x$25,000	4x$38,000	11 x$46,000
$75,000	$152,000	$506,000
3 teachers	4 teachers	11 teachers
TOTAL: 18 full-time teachers		$733,000

New **Model (using 1994 equivalent figures)**			
Learning guides	**Entry teachers**	**Mentor teachers**	**Master teachers**
7 full-time	4 full-time	12 two-thirds time	4 one-third time
7 x $22,000	4 X $27,000	12 X $32,000	4 X $24,000
$154,000	$108,000	$384,000	$96,000
7 teachers	4 teachers	7.92 teacher equivalent	1,32 teacher equivalent
TOTAL: 20.24 full-time guides and/or teacher equivalents			**$742,000**

(table C-3).[18] The 18 classroom teachers were mostly at the top of the teaching pay scale.

With our new structure, it is difficult to make direct comparisons, because of all the differences. We have seven learning guides (one for each Center), four entry teachers, 12 mentor teachers, and four master teachers. The Center time for mentors and master teachers (two-thirds and one-third) is an average and in practice it is different for specific teachers. This gives us, counting learning guides, the equivalent of more than two additional teachers, which changes the student-teacher ratio from 30.5: 1 to 26.9:1. The payroll difference is not significant given this reduction in student-teacher ratio.

Quality Review Panelist: So, in table 3 you have only listed the money that mentor teachers receive for teaching. But they essentially have other jobs that add to this salary?

Josie Rowe: Yes, some of the mentor teachers combine Center teaching with work as resource specialists in a particular area of expertise. These positions were covered by district funds and the cost also remains about the same. Instead of one teacher working across several schools, these resource positions are held by mentor teachers who are at the school all of the time. They often have the benefit of knowing much more about the students they work with since they see many of them in regular Center teaching.

Other teachers developed expertise outside these certified school or district positions. Some of these are funded out of public education funds, such as Courtney Balboa who supervises student teachers for the university. Also, I think we have two mentors working with the State Department. Is that right, Ben? (Ben nods.) Two or three are participating in research projects and testbed activities that are funded by a combination of government and foundation money. And then we have a few that work with commercial firms, mostly creating classroom materials. The most difficult part is trying to keep up with the developments in the lives of all of our teachers and organizing lessons and professional commitments into a single system. I would be misleading you if I said this system always works smoothly. But we feel the benefits far outweigh the extra scheduling work.

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[18] For the sake of this comparison, all salary estimates are based on monetary values of 1994. The salaries listed for the traditional model are drawn from the California Statewide 1992-93 Average Salaries and Budget Percentages for School Accountability Report Cards. I have also consulted with school district superintendents and school principals to assure reasonable figures.

TABLE C-4: 1994 Administrative Salaries	
Salary for Superintendent	$100,000
Salary for two Assistant Superintendents ($78,000 x 2) =	$156,000
Costs associated with School Board	$60,000
Salary for eight Principals ($66,000 X 8) =	$528,000
Total Cost –	**$844,000**

Quality Review Panelist: For the master teachers, your chart shows only $24,000 which I assume covers one-third of their time that they spend teaching. How are master teacher salaries covered?

Josie Rowe: Yes, that is a good question and that leads into these other two charts which I have prepared to compare our district administrative costs to the past. Table C-4 shows our 1994 administrative costs.

Table C-5 shows how things look in our current arrangement. I have subtracted the teaching salaries for master teachers as this amount is covered in the teaching budget in table C-3. You can see that our administrative costs have remained more or less the same.

Quality Review Panelist: I see that you subtracted the costs associated with the school board. I read somewhere that you don't have a board. Don't you value community input?

Josie Rowe: We do! So much so that we wanted to find a way to strengthen it, but we didn't believe that a school board, as it operated in 1995, was accomplishing this goal. The school board was set up in the early part of the last century to make the schools accountable to the public. The problem was that, in practice, school board members did not always have the background in education to provide the level of leadership that was required. Each newly elected board had be reeducated. The more serious problem was that the school board members had almost no links with the community they represented. They made decisions as individuals and few people in the community had any idea of what was going on in the schools.

Too often, well-intentioned people ran for school board because they were concerned about a single, controversial issue. But a school is a complex system and any attempt to solve a single problem without a systemic understanding of the educational community causes problems. Every two years our superintendent and her assistants struggled to educate a new panel of citizens so that they could make critical decisions that affected the lives of teachers and students. The problem with this model was that our school leader became a school board tutor working overtime to educate five people. This was problematic in two ways. These five people had limited channels for gathering community input. And we needed the time of our superintendent to work with teachers to provide leadership and direction. Most of us felt strongly that if we were going to have the leadership that was necessary to be constantly evolving, the decisionmaking power needed to be in the hands of our teachers and not hastily trained outsiders to education.

We actually do have a school board but it has changed in name and function. The decisions that used to be made by the board are now made by our "Teacher Senate." Each teacher at our school, regardless of level, has one vote in the Teacher Senate. The voting takes place electronically. This way our superintendents work with teachers to create the best quality program possible. But I don't want to ignore the issue of community leadership in education. We have arranged a luncheon

Table C-5: 2005 Salary for School Leadership	
Five Master Teachers/ Co-Superintendents (4x **$82,000**)	**$ 328,000**
16 Master Teachers/Co-principals, two per school, (16 x $65,000)	+$1,040,000
Total	$1,368,000
Master Teacher (one-third) teaching salary ($2400,00 x 21 Master teachers)	$ 504,000
Total	**$ 864,000**

over this topic because we are absolutely interested in keeping the community highly involved in all decisions that affect their children. As you will see, our community is entirely behind our decision to put educational decisions in the hands of experts.

Quality Review Panelist: How would you describe the benefits of your changes in teacher's roles and responsibilities?

Ben Barrel: Well, the teachers here are alive with passionate interests and they have time and support to pursue them. When they teach, they teach from what they are learning. It is fresh and they are not bored. In fact, I doubt that you will find anyone, teacher or student, who uses "bored" to describe what they do here.

Quality Review Panelist: I did find one child who said that a computer game she was working on to reinforce the times tables was boring. But in some ways it supports what you said because she was eager to return to her project work, or at least that's what she said.

Ben Barrel: All right, I probably do overstate things a bit (laughter). But I am sure you see the excitement that all of us here feel. I work with excellent school leaders from all over the globe using telecommunication to explore new ideas. And I bring that excitement and the ideas back to inform my work with teachers and students. I often share ideas that I learn with students when I teach. And I learn so much about leadership from listening to students. I think the students enjoy being part of the design. They know that they are partners with the opportunity to exchange ideas with everyone in our school community.

Co-Principal Nancy Broyles had entered the room and been listening. She joins in the conversation.

Nancy Broyles: I find having a principal team has helped us make tough decisions. This is my second year. This shifting responsibility within a partnership keeps us from either changing things too drastically or becoming too fixed in a single way to accomplish a task. Since any master teacher can represent our school, there are more people to be on those endless committees and task forces and to be present at school functions. I can now have dinner with my family on at least some weekday evenings. Ask any principal outside of our district how many times he or she makes it home for the evening meal!

Quality Review Panelist: What if a master teacher becomes too busy to teach?

Josie Rowe: Master teachers must teach at the very minimum the equivalent of one hour a day. But this does not mean that a master teacher has to teach every day. One of our district master teachers does televised teaching and tapes all of the segments in one term. We can teach summer school, but we have to spend some time teaching the age group we serve. That was one of our Charter District arrangements. I really enjoy my teaching.

Nancy Broyles: By the way, mentor teachers also have this flexibility. That's the headache in scheduling we referred to earlier. We try to balance the requests of the teachers, but we also have to make sure that all of the Centers are well staffed with teachers who are skilled in the appropriate areas. In the classroom arrangement, the principal used to spend so much time sorting kids into classrooms and responding to parents' complaints about placement decisions. Now the parents are mostly content because the student teams cycle through all of the teachers. The strain now is to balance all of the teacher requests. But, like before, things have to work out and they do.

Josie Rowe: An important difference is that we can support each other informally. If I have a meeting to go to and it is scheduled for a time when I am teaching, I can check with one of the Center teachers and just trade times or days. With more people, there is so much more flexibility. I remember my days as a classroom teacher when you couldn't go to the bathroom without causing staffing problems.

Well, I can see that our lunch has arrived and also members of our community advisory boards. I think we can shift to the topic of community leadership and involvement.

▋ Parent and Community Interactions

At this point, a number of people enter the room and a buffet lunch is set up on one side of the room. As we bring our lunch to the table, Bill Parks (in a fire fighters' uniform) is introduced as the chairperson of Central's School Community Council with Amelia Leff, Bud Porter and Lensci Denny as council members. Dee Sharp is Central's representative on the District Community Board. Josie excuses herself and leaves while Ben and Nancy stay and Barb rejoins the group.

Barb Milner: Welcome and thanks to all of you for being here. Our guests have heard that we have a different model of community involvement. They know about our community exhibition but we haven't said anything about Central's Community Council. Bill, I am going to let you talk about this group.

Bill Parks: Sure, Barb, I would be happy to. Our Community Council is a combination of our former PTA and school site council. We meet three times during each term to discuss schoolwide issues. We form study teams to think about ways to solve different school problems and ways to support our Center teachers. One of our tasks is to circulate information before the exhibition and to prepare community feedback forms for each exhibition. Because so many of the people in the community come to these presentations, we use this opportunity to get parent and community input on issues that face our schools. This way no one person or group has the say about what the "community" thinks. Teachers have worked very hard to be responsive to our collective positions.

Dee Sharp: Our District Community Board works in much the same way. Each school community elects one person to serve on this committee. These elections are done during our exhibitions at the end of the year. Council members have much less decisionmaking power than school board members did in the past. Their role is to provide community input to the district Teacher Senate. One important service we perform after every exhibition is to collect the information from each school and publish a summary of results in local newspapers.

Amelia Leff: One of the things we do as part of the council is to encourage all community members to come to our exhibitions—even if they don't have children. We want them to see the school as their school. Everyone needs to be involved, not just parents. Some of the students take their presentations to hospitals and convalescent homes for people who find it hard to come to the school. We post signs and banners in stores and banks and CD rental libraries inviting everyone to come to school. We have found that our community is more willing to support our schools and vote for school bond issues if they visit the Centers and see how hard students work with such outdated equipment.

Dee Sharp: The Centers are a wonderful source of public education. They are like evolving museums with exhibits designed by kids. I really like learning with my kids, and I feel so much more involved when I see not only what my child is doing, but what teachers, other experts, and other kids are doing. I always look forward to the exhibitions. And I like seeing kids learning outside of the classroom in our community.

Amelia Leff: Our community council has also taken the lead in solving a long-standing problem. Kids out of school without parent supervision became a problem about 30 years ago when unpaid "homemaking" mothers moved out into the paid workforce. Some kids went off to organized preschool programs, but many kids were left in empty buildings. So, over the past few years, we set up an after school community program on the school site. We passed a bond to help with initial costs. Basically, we created a contractual agreement between the city and schools to work together to provide a community after school program. Then we scheduled a number of classes offered by people in the community. Some are routine like

scouting and sports, but we added different options including clubs for hobbies like reading, chess, gardening and kite making. One of the parents designs unusual kites and sells them worldwide. She offered to work with students for an hour a week.

The most controversial issue, which I think is finally worked out, has to do with religious education. We understand the recent Supreme Court ruling to mean that religious education can be held on school grounds under the following conditions.

1. Religious instruction is a parental choice and other options are available.
2. Teachers are not involved in the religious training because of students' strong emotional attachment to their teachers.
3. All religions are given an equal opportunity to provide classes.
4. All expenses other than the use of school buildings are covered by the religious group.

So, we have about 10 different religious training courses. There is also a values clarification and self-esteem program that is funded by the Coalition for Religious Education in Our Schools. This is an organization of all the religious groups. They felt it was important to offer a non-denominational discussion of basic social values for children whose parents do not want religious education but would like their kids to think about difficult social problems.

Bud Porter: I just wanted to add that one of the benefits of this program is that many of the students who in the past were segregated in religious schools are back in public education. This makes our community more integrated. This option deflated the effort to resurrect voucher initiations that took money away from public education. The effect on overall school climate has been great. And I think it is great to have such an extensive after-school program provided by the community. Community services are so much more effective than police in reducing crimes.

Bill Parks: And, there are other class options. Some have more expenses associated with them so we ask parents to donate the cost of supplies,

but we don't exclude students. We have interschool teams and tournaments in jump rope, track, soccer, and basketball. Students can take classes to learn to be referees. And we have Science Olympiad training classes for intermediate students during the spring to prepare a team for this regional competition. This has been run by parent volunteers for seven years now. Also, Planned Parenthood offers a course called "Our Bodies and Ourselves" for our 11- and 12-year-olds. The school library/media center is open and Friends of the Library sponsors storytelling and craft programs for our younger students. On our stage there are often "dress rehearsals" and kids in the library program serve as an audience

Quality Review Panelist: Who provides all of the teachers for these clubs?

Dee Sharp: As you might guess, it involves a coordination of the efforts of a number of groups. The city pays small teaching stipends for teachers. Some teachers hold special education classes during this period and these are funded with federal money. All religious education classes are paid for by their congregations. Some programs have community sponsorship. For example the Seaside Botanical Garden Society is sponsoring the gardening club and mostly retired people help kids learn these skills. Some of the other clubs, like Science Olympiad, are run by parent and teacher volunteers. The coordinator for the service component from our high school arranged to send about a dozen high school students to each of our schools each afternoon. Most of the high school students come on a once-a-week basis over the year, which fulfills their service requirement. They provide supervision for our sports tournaments and some coaching in both sports and school. We don't charge for any of the programs but we do accept donations and many of our parents become sponsors of a club or program.

Quality Review Panelist: How many students participate in these programs?

Bill Parks: Usually about 80 percent of our students stay on any given day, but I would venture to say that most kids are in some program. The

kids who do not stay are usually kids who are involved in community programs that we can't offer at school, like swimming, gymnastics, club sports, or other activities.

Quality Review Panelist: How do you deal with the issue of equipment and classroom materials being taken or destroyed?

Dee Sharp: This was one of the biggest problems in past programs, but we've had less trouble. I think it's because kids see it as school and they respect property just as well as they do during the rest of the day. Students are used to moving around and working in different spaces. For many students, the program is just part of the school day. The computer equipment locks into those recharging units you saw. The biggest concern is always damage to kids' work and we deal with that the same way we do during the day. We want kids to learn to respect the work of others. I think it helps that we know exactly who is in which room each session so that there is some accountability. Overall, we've had fewer problems in this area than we expected.

Bill Parks: We are pleased with our success and we are constantly considering new ideas as well. At every exhibition we show what we have accomplished and ask students, parents, and community leaders for their input on how to make the school better. Right now, for example, we are exploring an idea for programs during term breaks. There has always been federal money to provide special tutorial work for "at risk" kids and some special education programs. But we are working on plans to provide inter-term opportunities for all students, like our extended community school program, maybe on a sliding scale for cost.

Barb Milner: So, I hope this makes it clear that while we don't have an elected school board making education decisions as in the past, we have found other vehicles for keeping us connected with the community. This gives our educational leaders more time to deal with pressing school problems and we feel that these open exhibitions make us publicly accountable to our community.

Quality Review Panelist: I guess I would like to know how you managed to get such a vibrant community effort going.

Amelia Leff: I can respond to that because I think I have been involved in this school the longest. My son is now in high school and comes back as part of his community service. I just consider it my community service to stay involved and I enjoy it. But, you ask how we got from a detached school to this new arrangement where the school is "central" to our lives.

I think the first step was when teachers starting to teach integrated themes and they did not have enough resources. So they appealed first to parents and then to everyone in the community. Then in 1994 we received one of the "Service Learning" grants and the kids moved out of the classroom and into community projects. They started producing information sheets and newsletters that were available in stores and banks. Then I think we started to move our displays into the community. Our small airport let us use their hallways for our public education campaigns. Once the kids had a purpose, they were more geared into learning. And this relationship with the community continued to grow as teachers pulled more of us into the classroom and the kids took more of their learning out to the community.

Lensci Denny: Here is another example of this service learning. One of our teachers, Clare Devlin, took a survey in a local senior citizen organization about what their members would like to learn about computers and specifically what applications interested them. Then she had her students learn how to use these programs so they could teach them to the seniors. For one month the seniors were invited to come to the school and learn from the students. This program was very successful. But what Clare never realized is what a powerful resource the seniors would be to the classroom once they were computer literate and interested in what was going on in the school. They have contributed in so many ways, both in time and money; they gave us a big thrust forward.

So, an attempt to help this others ended up helping us. And I guess that is how it went.

After more discussion, the lunch is cleared and the community representatives leave. The review panel returns to the school planning office to look over school records, student performance scores and tests, and other documentation. The test scores show a steady climb in averages but lots of student variation. Barb describes how some students who have done well in the past because of good memories are taking longer to adjust to this new way of demonstrating their thinking.

Later in the afternoon, you meet with the entry and mentor teachers. They reinforce the same story that you had heard all day. Everyone has more time to engage in teaching and learning. One of the mentor teachers is explaining why this is so important.

Michel Lickte: The most significant difference from the past is that we have time—time to think, time to reflect, time for collaboration with others making the important decisions that set the stage for learning. Most of us had an "area of expertise" before these changes, but we had to develop it while teaching full-time and we rarely received the recognition or encouragement to really pursue it. Being able to retreat to the office and make professional contacts during business hours—this is a rare benefit for teachers. And the school offices are a great place to work, I really enjoy working with other teachers on projects. The changes have encouraged an entrepreneurial sense to professional development which many of us have found very rewarding.

Sandi McCan: I love teaching but I also enjoy my work testing, reviewing, and editing materials for School Media Tools Service. And I enjoy doing this work in the evening at home. I teach between 9:00 and 12:00 and between 1:00-2:00. Since I have extra time during the day, I sometimes help a child who needs some individual help. And I am not the only one. We all have much more flexibility now that we don't have to be with the students all day. I can't tell you what a sense of freedom I feel when I have all of my students working on some project and I can just leave the room knowing that the learning guide will supervise student work. Since my work involves testing new curriculum, I sometimes teach special classes making it possible for scheduled teachers to work with smaller groups.

Clare Devlin: In contrast, I like getting here about 5:00 in the morning and working in the office for about three hours. I have a grant to explore lifelong learning which helps me bring the seniors into the school. I am working on an article about our project. Sometimes I stop by the Senior Center on the way to school. Like Sand, I really enjoy the freedom to be at the school and not always in the classroom. I can come in here and just talk with other teachers. We have planning meetings and workshops during school hours! And I don't mind filling in for other teachers or even helping out in the office, especially working with Marilyn. I have learned so much about computer graphics that I think my next project will be doing something with her.

Quality Review Panelist: How would you characterize the most significant change that has taken place in your charter district?

Hernando Borja: I know how I would answer that. For me it is becoming part of a vibrant community working collaboratively in the learning centers, at the school, and in the local community and across the country in the educational community. The collaboration is intellectually satisfying to me and to all of us. It provides many more opportunities for quality learning. We are all proud of what the students are accomplishing in the learning environments that we have created together. The rewards are collective rewards. In the past, there was always a bit of competition among teachers about who was the "best" teacher at a grade level, who had the best classroom. Parent requests caused so many conflicts as we tried to place students in individual classes. But in this arrangement teachers as well as students work and learn from each other. The multi-age teams are working very well—kids are more supportive in helping one another learn as there is not the under-

lying assumption that everyone in a team should already know something. We have always know that teaching is one of the best forms of learning but it was much harder to arrange for it to happen naturally in traditional classrooms. But in the centers, *teaching and learning* are part of almost every interaction.

And the other part of this is the shift in the relationship between teachers, principals and superintendents. The decisions that effect our schools and our work as educators are made by us in the Teacher Senate. We are all asking ourselves about what we can do to improve education and we all have a say in the answers to this question. We are more concerned about creating a shared vision then following the education ideas of a charismatic leader. The design of this school district is *our design* and that is what makes it so powerful.[19]

Quality Review Panelist: How would you evaluate the role of technology in the changes that have taken place?

Mary Stanley: As Central's technology coordinator, I can respond to that. The tools that we have, and the new tools that are available each year, are incredible. But they are tools and we need to know how to use them to accomplish important educational roles. In some ways, we no longer even think about the role of the technology separate from the activities because we are beginning to take it for granted. But I think Hernando just gave the answer to your question. Access to information resources in the Net World has been extremely helpful, and we have a better match between our teaching objectives and supporting materials. But the most significant change is the ability to work in groups with educators who share similar interests or face similar challenges. Everything from teacher senate decisions to student group projects are facilitated by our communication tools. I can say, without a doubt, that the rich network of human resources is the most significant technological advancement we have.

The meeting draws to a close. You are impressed by the strong sense of professional respect the teachers have for themselves and one another. The Teacher Senate is more than a symbolic step toward teacher responsibility for education. The teachers themselves convey the feeling that their advancement in the field of education is unlimited.[20]

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[19] The view of the school as a community with self-management by professional teachers is an ideal that many would like to see as reality. T.J. Sergiovanni, in his book *Moral Leadership: Getting to the heart of School Improvement* (1992) (San Francisco, CA: Jossey-Bass, 1992) advocates replacing strong centralized leadership in education and with collaboration communities. Collaboration is time consuming and it is different to implement a high degree of teamwork without changing the existing dimensions of the role of classroom teaching.

[20] "You" is used in the plural in this paper to refer to two different groups, those who have read the paper and those who will read it in the future. Many of the statements and questions of the review panelists have come from this first group of readers and I am grateful for their comments and suggestions. For those of you who have just finished reading the paper, I would enjoy reading the report of your Quality Review Panel. What did you think of this school and school district? Where do you suspect that they will run into problems? What are the strengths of the program, and what policy recommendations would you offer to them? If "you" want to write the Quality Review of Central School, or of the Pacific School District, I would enjoy reading it: Margaret Riel, InterLearn, 943 San Dieguito Drive, Encinitas, CA 92024, (mriel@weber.ucsd.edu).