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ABSTRACT

The National Education Commission on Time and Learning (NECT&L) is an independent advisory body authorized by Congress through Public Law 102-62, the Education Council Act of 1991. The commission is undertaking a comprehensive review of the relationship between time and learning in elementary and secondary education, including international comparisons, the use of time in and out of the school, the use of facilities, year-round professional opportunities for teachers, and estimated costs of adopting longer school days and years. Albuquerque Public Schools (APS) adopted year-round education in 1986. Teachers and students in three evaluation cycles have reported improved learning and higher teacher morale. However, "protracted and bitter community opposition" has arisen, particularly among more affluent residents. This paper summarizes proceedings of a hearing where testimonies were offered by various individuals, with a focus on time, learning, and systemic change. The second day of the hearing focused on student learning and motivation, professional development, educational technology, and the needs of English-as-a-Second-Language (ESL) students. A list of witnesses' recommendations, one figure, and a list of participants are included. (LMI)

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SUMMARY

HEARINGS OF THE

NATIONAL EDUCATION COMMISSION ON TIME AND LEARNING

ALBUQUERQUE, NEW MEXICO

JANUARY 14-15, 1993

PREFACE

How can schools help *all* children succeed? With more time available for learning, will educators do more of the same or organize learning differently? What do families think of different school calendars? Who decides how best to incorporate technology into new visions of learning organized around systemic change? These questions and others challenged the members of the National Education Commission on Time and Learning (NECT&L) and its guests at a two-day site-visit in Alburquerque, New Mexico on January 14-15, 1993. The site visit included a formal hearing and visits to two schools.

NECT&L is an independent advisory body authorized by Congress by Public Law 102-62, the Education Council Act of 1991. Its members—appointed by the President of the United States, the President of the U.S. Senate, and the Speaker of the House of Representatives—are to present a report to Congress and the Secretary of Education by April 1994. The Commission has been asked to make a comprehensive review of the relationship between time and learning in elementary and secondary education, including international comparisons, the use of time in- and out-of-school, the use of facilities, year-round professional opportunities for teachers, and estimated costs of adopting longer school days and years.

The Albuquerque meeting is one of a series of site-visits scheduled by the Commission as part of its fact-finding effort. Additional hearings are to be held in Santa Monica, California (March 25 and 26) and Ypsilanti, Michigan (April 29 and 30). This summary has been prepared to respond to numerous public requests for information on the progress of the Commission's work.

Milton Goldberg
Executive Director

SITE VISITS

YEAR ROUND EDUCATION: ALBUQUERQUE'S EMBATTLED GROUND

Albuquerque, New Mexico is today a community divided by one of the core issues in the Commission's charge: Should time be a variable, instead of a given, in public education, and if so, how so? For two days in January, 1993, Albuquerque's recent educational history became, for visiting Commissioners, a lens for focusing many of the issues surrounding time and learning; inded, a more challenging environment to test ideas about time and learning could not have been dreamed up by the most imaginative reformer.

The Albuquerque Public Schools (APS) make up the nation's 13th largest district, covering an area the size of Rhode Island, and providing educational services to more than 90,000 children. APS is also one of the growing number of "majority-minority" districts in the United States, comprising 48% Anglo, 42.4% Hispanic, 4.7% Native American, 3.1% African American, and 1.8% Asian students, but APS is even more diverse. At Emerson Elementary School, one of the two sites visited by the Commission, for example, some 20 languages and cultures are represented—a kind of educational Ellis Island. Nearly 3 in 10 students are free-lunch-eligible. In some schools, Emerson among them, there is a 90% mobility rate from one year to the next.

In 1986, several factors led APS to opt for an unconventional scheduling alternative. Because the burgeoning school population was putting a strain on a strapped budget and on the sheer space available for education, and because school officials saw a potential for improving instruction by adopting a different time-base for the school year, the school board decided to offer

Year Round Education (YRE) in three schools on a (voluntary) pilot basis in 1987; three more schools were added in both 1988-89 and 1989-90, and eleven more in 1990-91. In 1992-93 there are 26 YRE schools involving 15,000 students. According to school superintendent Jack Bobroff, "the board has established that Albuquerque will become a year round school system," not by extending the number of days attended, but by staggering the attendance of all children throughout the year on the basis of different schedules (see box. p.6).

According to testimony offered by assistant superintendent Geraldine M. Harge, YRE has offered APS some significant advantages, not least of which is the opportunity to totally rethink the way time is used. Other advantages cited by Harge include:

- effective pacing of the school year through the use of continuous breaks;
- enhanced options for enrichment and remediation throughout the year;
- opportunities for teacher collaboration and professional enrichment;
- more creative opportunities for grouping; and
- more cost-effective use of physical plant and the saving of millions in new school construction through the year-round use of school buildings.

Teachers and students in three evaluation cycles have reported more learning and higher teacher morale. A 1992 North Central Association review reported "more curriculum being covered due to less [post-summer vacation] review time needed" and "greater retention among low achievers." After initial difficulties, parents and family schedules generally seem to be adjusting to the new regime. Test score results have been inconclusive, however, and the multi-track option (see box) "absorbs resources in ways the single-track option does not."

"Protracted and bitter community opposition" has arisen, however, said Harge, including angry and divisive school meetings, protests and picketing, even a lawsuit (APS won). Most resistance has come from more affluent segments of the community, on a variety of grounds, e.g.,

the disruption of summer family activities, the scrambling of schedules in two-wage-earner families, added building maintenance and utilities costs, and disruptive impacts on the lives of students who participate in extra-curricular activities, or who have—and often need—after school jobs. "Tradition is strong," Harge notes, and the "mythology of summer vacation is so pervasive that it takes precedence over educational values for some people. Facts and figure from experts make few inroads when family or social traditions are threatened." Nonetheless, she insisted, changing the calendar affords "a promising opportunity for educational restructuring." But she cautioned that that opportunity can be realized "only...when teachers, students, and parents use their learning schedule framework as part of a conscious educational improvement strategy."

In her concluding remarks to the Commission, Harge made perhaps the most unequivocal endorsement of adjusting school time yet heard: "Changes in the calendar and use of time have the potential for catalyzing reform as do almost no other single change that can be made."

One school where the YRE option seems to be working well is Emerson Elementary. In addition to serving as a regular elementary school, Emerson hosts two special programs that knit the YRE experiment together. One is a childhood development center for about 40 pre-K children, one of six in Albuquerque. The center has a strong focus on parent participation and boasts high rates of involvement in its parent workshops and monthly parent-child activity days, for example. Emerson also hosts "inter-sessions" (see box) for some 150 "off-track" students who are between twelve-week regular school sessions.

SCHEDULING YRE

YRE students in Albuquerque go to school on a 12-week-on, 15-day-off schedule; the cycle is repeated four times a year. The entire system is on vacation for 3 weeks in July.

YRE schools are either single- or multi-track, i.e., all their students follow the same schedule or 20% of the students follow one of five staggered schedules. Multi-track students are assigned by the school based on student and parent preferences, space availability, and special student needs.

During the 15-day inter-sessions, optional learning programs are offered. About 10% of all students, city-wide, take advantage of these opportunities.

Emerson, which has a 77% minority population, offers English as a Second Language, a childhood literacy program, a Chapter 1 reading program, group and individual counseling, and an early-learning program for four-year-olds as integral parts of its curriculum.. Under the direction of principal Anna Marie Ulibarri, Emerson is a "multi-track" school (see box), which uses its inter-session as a professional development model for teachers. Student teachers from the University of New Mexico take a leadership role in these interim programs, under the supervision of regular staff. Trainees and teachers alike use the experience for educational experimentation and to sharpen their teaching skills.

GOVERNOR DENT ELEMENTARY SCHOOL

Principal Marilyn Davenport presides over an ethnically diverse student body of about 750 K-5 students; the curriculum at Governor Dent is grounded in the multiple intelligences model developed by Howard Gardner in *Frames of Mind.* The Dent philosophy is basic: "*All* children can succeed," Davenport said, "our motto here is 'maximize your intellect.'" Each Dent student has a nightly reading and writing assignment that is affirmed, discussed, and critiqued by students and teachers alike. Among the highlights of the site visit were readings from student work by principal Davenport, several of them very moving.

Davenport is less than optimistic, however, about the possibilities of an extended school year. Asked what she would do with a 220-day school year, she replied, "I'd do more field trips [but] it's not how long you do it but what you do. I'd just want to do more of the same. I think we need to relax the demands made on our children, not increase them; down-time is important." She would also make use of additional time, she said, to provide more opportunities for parents to be involved in the local school program, and to help them learn more effective parenting skills.

TESTIMONY

Of all the resources available to conduct public education, time is the one resource that is utterly finite. Not talent and skill, not funds, not ideas and creativity—not even power. All these are plastic in nature. Time *and time alone* is finite.

If for no other reason, time deserves a place at the center of all strategic thinking about changing and improving how we educate our children. Unfortunately, as Commissioner Cross pointed out, the education reform discussion has itself given scant attention to the issues of time and learning. Even the extensive discussion of subject-area education standards now being held around the country seem to show little concern about the impact of standards on the time dimensions of learning and teaching, an impact Cross opined would eventually require "about 200% of the time available to achieve them."

Those testifying at the Albuquerque hearings seemed cut from a different cloth, however. Although they did not always address themselves directly and specifically to issues of time and learning, they were quick to make important connections at the prompting of Commissioners' questions. In this way, the variety of education reform issues explored by witnesses helped provide the Commission with a kind of "map" of the broader context within which time and learning strategies must also fit, and fit well, in order to make a difference.

A FRAME OF REFERENCE

Although his testimony came midway through the second day, James Greeno of the Stanford University Institute for Research on Learning provided a broad theoretical structure for understanding the interaction of time and learning that can serve as one framework for the Commission's work as a whole. He made several general points:

- First, we forget that the *point of education is to teach students how to think*, that they learn to do so by practicing, and that public education's greatest need in the United States is for more emphasis on activities related to thinking skills, and less on acquiring routine knowledge and procedural skills. Unfortunately, most student time in school is spent on the wrong things—not on thinking but on "teacher-watching" and absorbing information.

- Second, time must be more effectively distributed across activities that are truly *learning* activities. "Very little of a student's time," he said,"is spent on learning how to formulate questions, construct explanations and arguments [and] other aspects of thinking. We have to distribute educational time better across a richer set of abilities."

- Asked by Commissioner Schwartz whether a longer school day would be necessary to accomplish the kind of education he had in mind, Greeno echoed principal Marilyn Davenport: "It's not just the time but what you do with it. I would endorse the idea that there is a need for more time, but not if it is spent the way we are spending it. The most compelling need is time for teachers to prepare and follow up, and for their professional interaction."

- Fourth, we have to construct stronger relationships between what students do in school and what they do with the rest of their lives. School can reinforce meaningful participation in other communities. We need to break the pattern in which school and extra-school activities compete and the school activities lose. "For working class kids, for example, school is irrelevant." Mutual reinforcement is the key. This is, in the end, a matter of educational equity.

- Fifth, Greeno stressed that "teacher time must include increased activities of planning, reflection, and collaborative development of curriculum and assessment practices." This means that teachers in the future will spend much

more time as "mentors and coaches," and less time as "delivery agents." This change will evoke a corresponding change in the way teachers' work is organized, including allocations of time, especially time for collaboration with other teachers.

TIME, LEARNING AND SYSTEMIC CHANGE

The message Greeno put to the Commission propositionally was reinforced not only by other witnesses, but also by the clear message of Albuquerque itself—a city and school district wrestling with the Hydra of educational reform, school restructuring, and the resources to do it. Several witnesses (e.g., Trujillo, Padilla, Burnett, Switzer, Greeno, Purnell) reminded the Commission that treating time as an educational variable is but one of many weapons in the arsenal of educational reform, including redefining missions, changing governance structures, introducing new curricula, promoting new teaching methods, and influencing school culture. All take time to accomplish; all bear implications for how time is expended. What makes the time issue particularly difficult for schools, in the apt analogy of New Mexico State Board of Education president Virginia Trujillo, is that "it's like trying to change a tire on a bus while driving down the freeway at 80 miles per hour." A recurrent complaint identified by the study of time and school reform issues conducted by witness Susanna Purnell and Paul Hill of the RAND Corporation verifies a commonsense insight: It always takes more time to do just about any job than people anticipate. Changing a school system is no exception.

The systemic perspective was also a focus for board president Trujillo. Explaining a New Mexico state board strategy of "top down support for bottom up change," Trujillo noted that the Board was looking for ways to help local districts and individual schools conduct systemic change, seeking to provide a "site framework" that included year-round education, standards for educational excellence, outcomes-based instruction, and a focus on the employability skills and competencies proffered in the reports of the SCANS Commission [*What Work Requires of Schools* (1991) and *Learning a Living* (1992)].

"If we want more seat time for children who aren't doing well," Trujillo said, "we need systemic change," and to fight the attitude that says "'the schools we already have should be good enough for my kids because they were good enough for me.'" In response to Commissioner Barrett's question about the tendency of state boards to "deal with short-term realities, and to ask only for what they think they can get from legislatures," Trujillo replied that the New Mexico State Board of Education had made up its mind to start asking for what the schools needed: "We have to ask for more."

Systemic change also lay at the heart of testimony offered by Tom Burnett of the Christopher Columbus Consortium, who spoke about the relationship between systemic change and educational technology. He noted that while "technology does not cause school restructuring, school restructuring cannot be imagined without it." Indeed, he said, "the technology question and the time question in the schools are really the same question .... You can always provide more of something, whether time or technology," but the important thing is whether what you provide accomplishes your goals. Educational technology—particularly computers—Burnett said, can be an effective tool for systemic change, but only when three things happen as well: (1) the computers have to come out of the labs and into the classrooms, (2) the computers have to be given to the teachers *first*, so they can learn how to use them, and (3) a school has to give enough *time* to appropriate the technology, at least three to five years.

The need for systemic change prompted a compete overhaul ôf Capshaw Middle School in Santa Fe, whose story was told by principal Tom Sweitzer. Changes included a new core curriculum focusing on exit competencies, alternative forms of assessment, full inclusion of special education students, and a new internal form of organization on "family system" lines. Among the factors contributing to Capshaw's restructuring success, Sweitzer singled out the autonomy the school has over its inservice days. "More time for teachers is critical to making changes," he said. "Once you get more time for teachers, then whatever additional time you get for students in the

form of a longer school year will be more effectively used." But cost factors are significant, he insisted. A 10% longer school year would probably involve a pro rata cost increase, he believed.

Systemic change was also pointedly addressed by U.S. Senator Jeff Bingaman, author of the legislation that created the Commission and instrumental in bringing the Commission to Albuquerque. Speaking on the morning of the second day of hearings, Sen. Bingaman held a historical context before the Commission. "Since *A Nation at Risk* [1983]" he said, "we haven't done anything about time. We have to solve this problem." Pressed on the issue of costs by audience member Charles Ballinger of the National Association for Year Round Education, who noted that some estimates show year round education could cost nearly $1 billion more per day, nationwide, Bingaman returned to the issue of context: "The resources questions isn't first," he said. "We're talking about systemic change. Let's decide where we want to go first, then figure out how to get the resources to go there."

STUDENT LEARNING AND MOTIVATION

Considerable discussion on the second day revolved around student motivation and learning. Especially helpful for Commissioners was the "mini-seminar" conducted at the outset by Dr. Sandra Graham, professor of motivational psychology in the Graduate School of Education at U.C.L.A. Motivation, she said, is simply why people think and behave as they do. She pointed out that motivation is directly tied to self-concept and self-esteem, and to avoiding experiences of failure that damage both. The most important variables affecting student motivation, Graham said, are these:

- Whether a child believes his or her ability is fixed and innate or modifiable. The key research finding here is children who believe ability is fixed display helplessness in the face of failure. Those who believe it is changeable seek challenge and view failure as part of the learning process.

- The reasons given for success and failure, and whether these can be controlled and changed through effort. The key research finding here is that significant

change in student performance can result when students learn to view failure as a result of lack of effort, rather than stemming from low ability.

- Whether achievement in learning is seen as an end in itself (oriented to a learning task), or tied to a desire to outperform others (ego-related). The key research findings here are that students do better when they see goals as learning rather than performance related, and when their educational environments are cooperatively rather than competitively oriented.

Thus, changing behavior is "motivationally adaptive" for students, Graham said. Those who believe they can control their behavior tend to do better than those who believe their performance is a function of ability.

Perhaps one of the best examples for understanding differences in motivation and their impact on students arose in a question to Graham by Commissioner Cross about comparisons of Japanese and American students. Among the reasons Japanese students outperform their American peers, Graham said, is that Japanese culture tells students that performance and results are largely a direct result of effort, whereas the message of American culture is that people either have ability or not. "We need," she said, "to stop focusing on ability and start focusing on effort."

The effort/ability issue led naturally to a discussion of tracking. Responding to a question from Commissioner Higgins, Graham saw no real place in the public schools in motivational terms because tracking gives students "no positive message ... there are other ways to encourage and reward competence and high performance," she said. By the same token, however, she noted that gifted and talented youngsters often need separate educational environments, especially in arts education. Responding to a question from Commissioner Schwartz about whether cooperative learning environments could always remove or soften the stigma of failure, Graham noted that "failure is always *worst* when it is shouldered alone."

WHY JAPANESE STUDENTS SUCCEED

Among the reasons Japanese students outperform their American peers, Graham said, is that Japanese culture tells students that performance and results are largely a direct result of effort, whereas the message of American culture is that people either have ability or not.

Kurt Steinhus, director of educational planning services at the New Mexico State Department of Education, indicated that technology was playing a large part in fostering student motivation. Students, for example, were making use of multimedia to learn about the cultural and ethnic diversity of the state's population, using adaptive technologies to assist students with disabilities, performing classroom simulations, and as a research tool.

PROFESSIONAL DEVELOPMENT

Time has implications not only for student learning but perhaps even more so for the professional development of teachers. It is they who are at the "point of delivery" for educational reform, and who, in consequence, must be equipped to serve a new educational mission. Teachers need time to prepare, to collaborate, to read and absorb new ideas, to perform the kind of labor-intensive assessment that is called for in today's changing educational environment. A consensus from Albuquerque seemed to be that without thinking through the implications of the relationship between restructured time and professional development, little could be accomplished in the long term. Indeed, one study (Purnell and Hill, *Time for Reform*, RAND, 1992) shows that a sample of successful urban high schools used 50 days a year of external assistance for training, coaching, and capacity building among its staff.

Time for Reform presents several devices that teachers, schools, and school districts can use to create the time needed to go about the tasks of educational change and reform, including the kind of professional development required. Briefly they are:

- promote the creation of time outside the classroom during the school day for reform activity. (Teachers cite this strategy as effective most frequently);
- refocus the purpose of existing time commitments;
- reschedule the school day;
- increase the amount of time available by adjusting time frames, and deadlines;
- encourage teachers to volunteer their own time time for school reform activities; and
- promote the more efficient use of time.

Among those convinced of the critical importance of the time-teacher interface was Virginia Trujillo, who told Commissioners that feedback from New Mexico teachers indicates a kind of professional development bind. "Schools can't retool without retooling teachers; it's not negotiable" was her conclusion.

In the same discussion, Commissioner Higgins linked the professional development and technology themes by noting the need for a national "electronic infrastructure" to elevate the quality of professional development programs. Kurt Steinhaus pointed out, in response, that some 60% of all New Mexico schools were now networked to share data; the use of computers as a statewide tool for inservice could not be far behind. Already teachers were working together to review and select appropriate software, using teaching and presentation workstations as part of normal classroom activity, and accessing library and museum resources.

Tom Burnett reported that the Christopher Columbus Consortium [CCC] was so convinced of the critical importance of professional development that one of its two demonstration projects is completely devoted to teacher training. One of the biggest reasons educational technology has made such a spotty impact on learning and on the conduct of education generally, he argued, is that too many people believed the machines themselves were the answer. "That's why there are computers on the shelves in schools all over America," he said. The key to the effectiveness of

educational technology, CCC believes, its to *tie staff development to technology incentives* by training teachers to use it first. That approach must operate side-by-side with a sharper focus and better articulation between staff development and local institutions of higher education, Burnett said.

Among the most interesting—and challenging—comments on professional development vis à via a longer school year came from Toni Martorelli, one of the school-district hosts, who reported to Commissioners that last year a group of APS teachers had asked officials if they could "give back" some of their hard-won staff development time in return for funds to purchase more classroom materials. Apparently not all shortages are the same!

TIME, LEARNING, AND TECHNOLOGY

Apart from the implications of educational technology for reform and professional development noted above, Commissioners were introduced by Kurt Steinhaus to the work of the New Mexico Educational Technology Planning Committee (ETPC). ETPC was established as a joint effort of the New Mexico State Board of Education and the Commission on Higher Education, and asked to find a strategy for using technology to improve education for all students.

From the outset, ETPC faced a number of challenges. In a predominantly rural state, how can isolated learners enjoy the same educational opportunities as those in urban areas, especially in upper-division courses such as advanced algebra, chemistry, and physics? How can New Mexico's limited educational resources best be leveraged through technology? How can students statewide gain access to New Mexico's exceptionally rich library and museum resources? How can the resources of New Mexico's two national laboratories (White Sands and Sandia) be tapped for educational advantage? How to prepare students to meet the demands of the technological and information age? In a phrase, Steinhaus reported, teachers and administrators are using a wide range of technologies to "work smarter," specifically to:

- improve the quality of student work across the board;

- make instruction and instructional environments more readily accessible to students with disabilities;
- use computers as tools to perform everyday tasks of learning—writing, using data banks, communicating, illustrating, and composing music;
- use a variety of software tools to conduct investigations, perform simulations, solve problems, and direct multi-media productions; and
- gather information literally from around to world for classroom use.

TECHNOLOGY INCENTIVES

The key to the effectiveness of educational technology, says Tom Burnett, is to *tie staff development to technology incentives* by training teachers to use it first.

Representatives from two educational technology vendors, Tom Burnett of CCC (Apple) and Donald Davidson of Jostens Learning, gave presentations on technological applications for learning being developed by their companies. Posing a question Commissioners have not only heard often but asked themselves, Davidson asked, "If we are not getting students to perform from 8:00 to 3:00, how is extending the amount of time they are in school going to help?"

The length of the school day, he argued, was not as important as delivering effective instruction; hence, using technology with teachers was Jostens's focus. The point, he challenged, was process, not schedule. The schools therefore have to keep taking the pulse of the commercial marketplace, where new technological hardware and applications first present themselves, with a view to adopting and adapting them to achieve educational outcomes. Technology is "not a frill"; it is now integral to the educational enterprise per se. Our task, he insisted, is nothing less than "redefining the meaning of education in the post-industrial age."

Two Jostens projects Davidson used to illustrate his argument were one in Orangeburg, South Carolina, where a computer-instruction master plan for below-standard math and reading

students turned a 35% drop-out rate into a student population in which 59% of the students were performing at above average rates on basic skills tests. In Bellevue, Washington, an "electronic classroom" delivered small-group learning and an interdisciplinary curriculum, built around six computer work stations.

Tom Burnett was clearly excited about MacCSILE, a research-based system that grew out of five years of work at the Center for Applied Cognitive Science in Ontario. MacCSILE is a networked system in which all students have simultaneous access to a database that they have themselves constructed. The teacher works as a facilitator, guide, and motivator, not as a director of learning. The project comprises three elements: (1) it is computer-supported, not computer-driven; (2) learning activities are intentional, as students are encouraged to question, do research, solve problems, and conduct critical evaluations, both independently and collaboratively; and (3) the learning environment is geared toward *systemic* change as students and teachers remain in charge of learning. MacCSILE is now being used at 32 CCC sites in the United States. Among the most encouraging results from the sites pointed out by Burnett were greater quantity of student writing, more depth of expression, higher standardized achievement scores for all levels of students, and more students "learning how to learn."

TIME AND THE NEEDS OF ESL STUDENTS

Among the most significant issues facing the future of American public schools is helping the growing population of American school children whose first language is *not* English to become proficient in it. Amado Padilla of the School of Education at Stanford viewed time as one of the most critical variables in this task, especially in light of research evidence that ESL is not receiving the kind of time required. Padilla spoke to four issues: (1) the time needed to develop language proficiency, (2) the time required to process information in a second language, (3) the importance of out-of-school learning (e.g., homework, tutoring) for speeding up second-language proficiency, and (4) the need to understand better the factors affecting the performance of "at-risk but resilient students" who do well academically.

TIME TO LEARN ENGLISH

In hours, it takes approximately the equivalent of 8.4 school years for a preschool child to acquire his or her first language.

— Amado Padilla

The second language problem is more widespread than most Americans believe, Padilla said; in California alone, for example, 1.7 million school children are now affected, a 350% jump in the last decade. According to Padilla's estimates, it takes approximately the equivalent (in hours) of 8.4 school years for a preschool child to acquire his or her first language. The current assumptions that a child can acquire school proficiency in a second language in two or so years is a gross underestimate. Added to this difficulty is the commonsense observation that social proficiency in a language is far different from academic proficiency, and recent Swedish/German research indicating that it actually takes bilingually competent individuals *more* time to process certain kinds of information (e.g., mathematical word problems). Applying what we already know about the value of homework and other out-of-school strategies has significant value for at-risk students who operate in English as a second language.

Padilla's conclusion is the "school policies that culminate in more [extra-school] learning opportunities and for longer periods of time merit support." School policies that focus on "enhancing the learning environment by making it more inviting [and supportive] for at-risk students [especially ESL students]" stand a better chance of being successful. "Students who need two to three hours of ESL instruction a day will fall behind" without this kind of attention," he said. Asked by Commissioner Barrett whether the recently instituted "three-year rule" in bilingual settings in Massachusetts was 'workable' for learning a second language, Padilla used Canada as an example, where research evidence points in the direction of a five- to seven-year time requirement.

POTENTIAL RECOMMENDATIONS

At the end of the second day, Commissioners invited witnesses to offer their thoughts on recommendations the Commission might consider for its final report to the Congress. The following recommendations were made that have specific legislative or regulatory implications:

- On the need for more and better data: "We have to fund demonstration projects that use extended hours to achieve positive and longer-lasting educational results." Such pilot projects "should be funded for two to three years" and focus in urban areas. [Sandra Graham]

- On services to Chapter 1 children: "We have to stop shuffling these kids from program to program, especially children from migrant families. We need some mechanism for communicating between programs." [Amado Padilla]

- On decision making: "Decisions about time should be made in a distributive way, not just top-down. We don't need any more rules, but to encourage [legislatively] the outcomes that changing time can bring about." [James Greeno]

- On priorities: "We have to decide what we want to do. Do we want the best educational system in the world or not?" If so our track record as a nation in the area of health care advances (costs aside) and developing sophisticated weapons systems show that we can accomplish what we decide our priorities are. [James Greeno]

- On assessment: The system of educational assessment in America must be completely overhauled. "Educational assessment today tells us nothing about kids. How do we know whether our schools are working or not? NIH and medical research would not work at all if it were done on a state-by-state basis." [James Greeno]

- On educational technology: (1) Focus on developing technologies that are learning-based and teacher-controlled. (2) Establish a system of tax credits for R&D on educational software. (3) Simplify the educational regulations that keep schools from becoming competitive. (4) Create a new system for financing the implementation of technology in the nation's schools..[Donald Davidson]

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