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ABSTRACT

These papers, by unidentified staff members of the California Department of Education, were supplied to participants in the California Education Summit for discussion and the development of specific recommendations. The summit's keynote address, "The Global Democratic Revolution" (Diane Ravitch), is also included, as is an alphabetical listing of summit participants. The papers are titled as follows: (1) "Educational Accountability: A Driving Force for School Reform"; (2) "Educational Assessment: Harnessing the Power of Information to Improve Student Performance"; (3) "The Number 1000: A Proposal to Measure School Performance with a Single Accountability Index"; (4) "Curriculum"; (5) "High School Transitions"; (6) Adult Literacy"; (7) "Organizing More Effective Services for Children, Youth, and Families At Risk"; (8) "Restructuring to Improve Student Performance"; and (9) "Teacher Preparation and Recruitment." (MLF)

BACKGROUND PAPERS

CALIFORNIA EDUCATION

MEETING THE CHALLENGE

The Schools Respond

CALIFORNIA DEPARTMENT OF EDUCATION
Sacramento, CA 1990

CALIFORNIA EDUCATION SUMMIT:
Meeting the Challenge, the Schools Respond

BACKGROUND PAPERS
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Introduction

These papers were supplied to the individuals who participated in the California Education Summit as springboards for discussion and the development of specific recommendations. *The Global Democratic Revolution*, the summit's keynote address delivered by Dr. Diane Ravitch, Professor of History, Columbia University, is also included, as is an alphabetical listing of summit participants.

A companion document, *California Education Summit: Final Report*, sets forth the specific recommendations of the summit's seven working groups.

BACKGROUND PAPERS

Educational Accountability: A Driving Force for School Reform[1]

Executive Summary

California's accountability program has a variety of elements which reinforce an overall educational reform strategy. The state's educational system faces many social, demographic, and academic challenges. This paper presents a conceptual model of accountability and a general discussion of the role of a comprehensive accountability program in an overall program of educational reform. Specific accountability mechanisms which have been developed in California are discussed, including reports of school performance, incentive programs, Program Quality Review, school accreditation, and fiscal management. Questions regarding the future development of each of these specific mechanisms are raised and briefly discussed.

[1] This paper should be read in conjunction with its companion paper on educational assessment.

Introduction

It is becoming increasingly apparent that if the United States intends to be a world-class competitor, the academic performance of our youngsters must improve significantly. Our students' levels of language, as well as their mathematical, scientific, and cultural literacy, are far too low; their understanding of and allegiance to our democratic beliefs and ethical values are tenuous; and they are not graduating from schools or colleges in large enough numbers. Unless improvements occur, our country will not be able to compete economically, sustain our democracy, or avoid the social trauma of a two-tiered society.

Successful educational reform requires a coherent overall strategy for implementation. This strategy must simultaneously attend to curricular goals, instructional materials, teacher preservice and inservice education, administrator leadership training, and assessment for both teacher use and public accountability. One of the single most critical strategies for reform is an accountability system that provides information to teachers, parents, and the public on strengths and weaknesses in student performance at the school, district, and statewide levels. At the heart of that accountability system is an assessment component specifically designed to support a curriculum.

The reform strategies employed in California have begun to make a difference. But despite the significant strides we have made in improving student performance in the past six years, much more effective approaches will be needed to meet the challenges that remain. We must galvanize action by identifying goals, translating those goals into standards for student performance, setting targets for improvement, designing improved assessment and performance measures, and developing simplified reporting strategies so that our progress, or lack thereof, will be abundantly clear to all concerned.

A Consensual Basis for Rebuilding

Seven broad education goals were proposed for consideration by the President and the nation's governors at the September 1989 National Education Summit:

* Improving the readiness of children to start school;
* Improving students' performance on international achievement tests, especially in mathematics and science;
* Reducing the dropout rate and improving academic performance, especially among at-risk students;
* Increasing the functional literacy of adult Americans;
* Providing the training necessary to guarantee a competitive workforce;
* Increasing the supply of qualified teachers and up-to-date technology; and
* Establishing safe, disciplined, and drug-free schools.

The first five goals are student-based and define the product of American education. Sub-goals can be identified in specific aspects of the curriculum such as the basic content areas of reading, writing, and mathematics. Over the last few years, a consensus has emerged about what students need to learn in these content areas. They have always been called the *basic skills*; however, they are taking on increasing importance for students as we approach the 21st century. Moreover, there is now widespread agreement that these basic skills are necessary for all students, not just the college-bound. A demanding curriculum that develops higher level thinking is essential for all

students. In order for all students to be successful in a more demanding curriculum, it is essential that they are taught in a developmentally appropriate manner beginning in preschool. Students must have a solid foundation in reading, writing, problem solving, and communicating in order to develop higher level skills. They must be able to read between the lines--not just figure out the literal meaning of what they read. To be effective citizens and workers, all students must be able to communicate in writing and present ideas clearly and forcefully. They must know when as well as how to follow procedures for solving real mathematical problems.

There is considerable agreement on how these basic skill areas should be taught. The new curriculum demands a new kind of instruction. The narrow rote methods of the past will no longer work. Students must be more involved in the learning process; they must become more responsible for their own learning and they must learn how to evaluate their accomplishments. Simply stated, they must be taught to think, be independent, adapt, and work with others to solve problems. The future productivity of our economy and the quality of life as we know it depend upon our success in developing these skills.

There is sufficient consensus on goals related to achievement in reading, writing, and mathematics to move toward defining standards, identifying targets, and monitoring progress at the state and local levels. We can also set goals for reducing dropouts and have developed ways to collect data that will provide for valid local assessment and comparisons within the state. The sixth and seventh goals identified at the National Education Summit are also extremely important; however, more developmental work is needed before we can agree on ways to measure them. While research and development are underway in these areas, we can begin immediately to devise the assessment and accountability systems needed to stimulate and reward improved student performance.

Accountability as a Force for Reform

A conceptual model for accountability

In education, as in business, high-quality information is the key to better performance. Accountability is the effective use of information to focus energy toward the attainment of goals. A good accountability program requires the selection of the right indicators of performance, reported expeditiously to the right audience, with meaningful incentives attached to performance, where appropriate.

The accountability system in California is built around one fundamental principle: accountability is the mechanism to focus attention in the right direction during the implementation of reform. The formation of the reform goals and the vision to translate these goals into change are a collective and consensual process involving representative participation of all those interested in education in California. Likewise, California's accountability efforts are built on a consensus regarding the relevant questions to ask as the reform effort is implemented. For example, a major thrust of the reform initiative is to make progress with students classified as *at-risk*. By asking the right questions (e.g., Have dropout rates decreased? Are more *at-risk* students taking college preparatory classes? Are more *at-risk* students attending community colleges?) and developing indicators to answer these questions, there is a clear, public sense of how successful the *at-risk* activities are. Public reporting of these indicators focuses attention on the important questions, and careful analysis guides the direction of improvement.

Accountability and reform

Accountability is an essential component of educational reform. It is the link in a comprehensive reform system which completes a coherent strategy of necessary change for California education. The questions asked in California's accountability system are intended to reinforce the vision of the

program. Direct writing assessment reinforces writing instruction. Authentic assessment in all curricular areas reinforces the teaching of higher-order skills. Reporting the number of students in a school who complete *advanced science* courses reinforces the importance of offering these courses. In other words, accountability is a major lever to reinforce an integrated school reform effort.

The other major elements of the Department of Education's accountability program are designed to focus schools on the important, deeper-level implementation aspects of school reform. The California Assessment Program, Program Quality Review, the *Performance Report for California Schools*, and fiscal accountability processes are all part of the Department's comprehensive strategy to implement the reforms as conceptualized. These accountability measures are, by design, intimately linked and complementary to the curriculum frameworks, staff development initiatives, the California School Leadership Academy, and at-risk programs, to name a few.

Accountability both guides and informs. Thus an adaptable system capable of adjustments and improvements is necessary. Quality information which comprehensively reflects the process of schooling is hard to come by. The California Assessment Program must change to reflect actual learning. The quality and validity of the indicators in the *Performance Report for California Schools* must evolve to gauge the complexity of schools. These changes must go hand-in-hand with the rapid changes occurring in all aspects of education so that information is up-to-date and informative.

Comprehensiveness

A thorough strategy for educational reform requires that accountability be comprehensive. An important goal for an accountability system is to develop comprehensive measures of student attainment and other valued results. The accountability system should provide information about all groups of students, whether college-bound or entering the work-force, disadvantaged or privileged, male or female, and of all ethnic and linguistic backgrounds. The existence of gaps in the accountability program risks the possibility that some groups of students will be left behind or that some aspects of schooling will not be as good as required.

There are other ways to bring about change, some less informing than others. Consider compliance, for example. While fidelity to legislative fiat is important and certainly necessary, compliance, in an accountability sense, is often a weak link to program quality or student achievement. Compliance reviews test only the first level of program implementation, i.e., whether the right students are served, not how well they are served. Compliance questions do not focus attention on the richer implementation aspects of programs.

Various aspects of the Department of Education's accountability system are discussed below. We begin with a discussion of *where we are* and conclude with some discussion points which focus on possible new directions. The following elements of accountability are discussed: The *Performance Reports* for California Schools and the Proposition 98 Report Card, Program Quality Review and accreditation, and fiscal accountability processes. The California Assessment Program is discussed in detail in a separate, companion paper.

Reports of School Performance

Performance Report for California Schools

In a striking departure from the national norm, California in 1984 began sending each public school an annual report containing vital performance data to be used for assessment and planning. An extensive set of quality indicators (including academic course enrollments, test scores, dropout rates, attendance, and access to higher education) was developed which yields important information about each school's performance. The report compares the school's performance with that of schools with

similar student populations, with all other schools throughout the state, and includes statewide performanc oals for achievement. Individual schools and districts are asked to set their own targets and establish provement strategies to meet explicit goals for improvement.

The performance report represents the technical *cutting-edge* nationally for reporting accountability data. More importantly, it provides detailed information to reinforce educational reforms at the school site level. Schools and districts now have the information needed to plan for improvement and to implement the reforms. Since 1984, when the accountability goals were established, California's schools have made impressive gains. Many of the statewide quality indicator averages are now substantially ahead of the targeted goals.

Additional Items for Discussion

* What additional performance indicators are needed to keep pace with changing emphases in school reform and newly evolving social and demographic conditions?

Business and industry are undergoing rapid development in California and the nation. At the same time, the population of school children is expanding rapidly and is becoming more diverse ethnically and linguistically. If schools are to succeed in providing all children with a high-quality education, they will need to respond flexibly to these changes. By the same token, to be useful and effective, the accountability system must change. Ideally, any new indicators should be provided expeditiously and should be easy to comprehend. Indicators of school performance should reflect central features of schooling, and they should be sensitive measures of changes to the system.

* Should standardized and uniform longitudinal records of students' educational experiences and attainments be centrally maintained?

It is extraordinarily difficult to obtain useful, high-quality information on student performance over time. Typically, each local school district maintains student records and transcripts in accordance with standards and procedures which evolved to meet purely local needs. This creates a burden for employers, colleges and universities who need to know a student's attainments. It creates great difficulties in evaluating the success of particular programs, curricular frameworks, or instructional strategies for legislative or administrative action. It may be desirable to have uniform standards and transcripts for maintaining information on student attainments and experiences. If such information could be maintained centrally, it conceivably could ease local record keeping requirements, as well as assist students transferring among schools or seeking employment or admission to college.

* Should an overall measure of school performance, a *Dow Jones* type index, be created?

School performance is difficult to judge because schools are highly complex, multifaceted institutions and are expected to serve many different social purposes. Even in the area of academic excellence alone, one can look at student achievement, course enrollments, dropouts, attendance, college-going rates, and many other measures. Should all this information by synthesized to produce a single, bottom-line measure of performance? A model for an answer to this question comes from the business world. A *Dow Jones Average* index of school effectiveness could track the progress of educational reforms in schools, in districts, and statewide. Any such measure would not be reported by itself, but would require detailed supplementary reporting of all its components. This index would provide a means for schools to measure their progress over time or to compare themselves with other schools or with the state. Properly designed the index would be linked to national measures of school performance and would permit comparisons with the nation.

Proposition 98 School Accountability Report Card

In the past, some individual schools and districts have done a good job of keeping their local communities informed, but others have not. Proposition 98, *The Classroom Instructional Improvement and Accountability Act*, an initiative approved by the voters in 1988, requires the governing boards of California school districts to prepare and issue an annual School Accountability Report Card for each elementary and secondary school under their jurisdiction. At a minimum, the report card must assess 13 specified school conditions, including student achievement, dropout rates, expenditures, class size, teacher assignments, textbooks, counseling, substitutes, facility operation (including safety and cleanliness), teacher evaluations, classroom discipline, teacher training, and quality of instruction. A model report card has been adopted by the State Board of Education to assist school districts in complying with the new reporting requirements. The Proposition 98 School Accountability Report Card poses a substantial challenge to local districts which now must design and implement systems to collect, analyze, and report information on school performance. What assistance can the Department of Education play in this process?

Additional Items for Discussion

* How can local district and Department of Education reporting of school performance be made more efficient and useful?

The content of the Proposition 98 School Accountability Report Card is spelled out in law in very general and flexible terms. The content of the *Performance Report for California Schools* has been developed by a process of consensus of professional educators over a period of years. How could these two reports be coordinated to present a coherent image of those features of schools now most in need of reform?

* What can be done to improve the technical quality of information reported by local districts to the public and to the Department of Education?

The technical quality of information limits its value in reports, its effective use, and is a hazard to the credibility of accountability programs. Some of the more common threats to the technical quality of information, which need to be addressed, follow. Statistics based on small numbers of students tend to be unstable and need careful interpretation. Changes in test scores of schools that are either extremely high- or low-performing may not reflect true differences, due to large errors of measurement. Record keeping for dropouts or highly mobile students is difficult and suffers from inconsistent standards across districts. Because course titles do not necessarily reflect course content, statistics on student enrollments in particular subjects can be problematic. Standards for graduation can vary across districts. Test scores and norms from different commercial tests may be more or less meaningful or comparable, depending on how they are derived or reported. Improvements in the technical quality of information should have a large payoff in making accountability a more powerful instrument for reform.

Accountability Promotes Improvement: Incentive Programs

Recognition for meeting educational goals is a potent mechanism for rewarding improved or high-level performance. The Department of Education established the California School Recognition Program to showcase outstanding educational achievement and to foster educational excellence. Overall outstanding performance is a prerequisite for recognition. The winning schools are identified through a comprehensive screening process, including an analysis of the quality indicators from the *Performance Reports* for California Schools, the reading of submitted applications, and visits to the schools.

Identification of Low-Performing Schools

Many schools have benefited from school reform, and students in these schools are making steady progress in meeting achievement goals. It is important to recognize that there are still some schools whose students are performing at unacceptably low levels, or who drop out, or do not attend regularly. There are strong economic and moral reasons to help such schools provide high-quality educational opportunities for all students. The Department of Education regularly examines school results on the California Assessment Program tests. Those schools which meet growth expectations or perform well compared to similar schools are publicly commended. Schools which do not meet growth expectations and do not perform well are made aware of that situation. In addition, federal changes to Chapter 1 in 1988 provided the Department with the responsibility of examining high and low performance of compensatory education programs, and the California Legislature recently required the Department to make recommendations on the identification of high- and low-performing schools.

The reauthorization of Chapter 1 (Hawkins/Stafford Elementary and Secondary School Improvement Amendments of 1988) emphasized the need to ensure success for all participating students in the district's regular curriculum by including specific provisions for accountability at the student and school level. California's State Plan for Chapter 1 describes measures, standards, procedures and timelines which districts are to follow to identify and assist schools whose compensatory education students are not progressing adequately or achieving desired outcomes.

Assembly Bill 9 (Chapter 832, Statutes of 1988; *Education Code* Section 33130) required the development of model criteria for identifying *at-risk* schools and of recommendations for a plan to identify, assist, and hold accountable at-risk public schools in the state. The resulting report described an accountability strategy that could be undertaken to provide needed assistance to schools unable to meet acceptable standards of academic performance. When substandard performance is detected, the local school board and administration should be notified and provided support and an opportunity to remedy the problem. If local efforts are not effective over several years, it would become the state's responsibility to ensure the quality of the educational program of the students.

There is a need to structure incentive programs properly so that both recognition for superior performance and assistance for low-performing schools are based on indicators that promote educational reforms. In business and elsewhere, proper incentives are an important instrument for managing change and guiding people in the right direction. Are there ways that incentives could be more effectively implemented in public education?

Additional Items for Discussion

* What indicators of school performance should be used for incentive programs?

* Should there be expanded incentives for good performance, going beyond ceremonial recognition to include monetary rewards and relief from regulation where appropriate?

* Should there be a process to identify and assist low-performing schools, so that schools which consistently perform poorly and show insufficient improvement are subject to intervention? Should there be a staged intervention process which results in the appointment of an educational trustee for the most extreme cases?

Program Quality Review (PQR) and School Accreditation

Program Quality Review and school accreditation represent two important accountability mechanisms which educators use to compare their school against professional norms and standards. Both

procedures begin with a school performing a self-study and include a follow-up, on-site visit by professional colleagues for validation purposes.

Program Quality Review, which schools must undergo every three years if they have at least one of several state and federal categorical programs, is a sanction-free vehicle for curricular and instructional improvement. In a given year, approximately 1,400 elementary schools, 350 middle schools, and 100 high schools participate in this improvement process. In addition, around 200 high schools participate each year in school accreditation by Western Association of Schools and Colleges (WASC).

A school's Program Quality Review is a process through which the effectiveness of the curriculum, instructional program, and schoolwide organizational strategies are diagnosed by means of a set of quality criteria that describe what an ideal program would look like in operation. As a result of this process, schools can identify matches and gaps between their current program and the quality criteria. The program review process yields information about what is working well and why, and what should be changed. Program review is a valuable part in each school program improvement cycle of planning, implementing, evaluating, and modifying the planned program.

The Western Association of Schools and Colleges (WASC) and the Department of Education share the common mission of assisting California's public schools to improve the curriculum and instructional program for all students. Prior to 1983-84, WASC applied its own standards to the accreditation process. However, in recognition of the common objective of school improvement for both program review and accreditation, the Department and WASC developed what is now referred to as *Pursuing Excellence: Joint Process for PQR and Accreditation.* High schools scheduled for WASC accreditation can voluntarily undergo this Joint Process and satisfy their Program Quality Review responsibility, since the Joint Process combines the Quality Criteria with the WASC criteria. The resultant process is not only cost-effective, but also clarifies direction and planning in a way that neither process alone could achieve.

With the current structure of PQR and Joint Process, it can be difficult, for a number of reasons, for a school to generate changes in their program that will affect student outcomes.

Additional Items for Discussion

* What priority should be assigned to the development of performance standards and what should be the process for developing them?

Despite the richness of the curricular Quality Criteria, there are no standards in them that clearly indicate that students are, in fact, understanding and effectively learning what is being taught. Absent an analysis of student work and a standard of student performance for various instructional areas, it is difficult to make suggestions for program improvement that are likely to affect student learning. The Department of Education and others are beginning to think through potential changes in the structure of the Quality Criteria, not only to build more outcomes into the criteria, but also to streamline the criteria to make them more usable during a review. Much additional work needs to be done in this area.

* Should reviewers be trained in specific curricular subjects? If so, how should this training process be designed and implemented?

Another difficulty schools have in generating effective programmatic changes has to do with the expertise of the reviewers. Unless reviewers are steeped in the content of a particular subject area, it is difficult in the short time-frame allowed for a PQR to assess a school's program and propose the most important and powerful strategies for improving the program in that subject area. Strategies

should be developed to recruit both Program Quality Review and Joint Process individuals who are experts in the various curriculum areas, and who can become familiar with information provided by new forms of assessment, including performance-based assessment and the use of student portfolios. In fact, training the same individuals for program review and in more authentic forms of assessment constitutes a cost savings to the system.

* Should accreditation and PQR be modified for particularly low-performing schools?

PQR generally works well in schools with well qualified staff and good programs. Some chronically low-performing schools, on the other hand, do not seem to benefit as much from PQR. Although some low performing schools may approach PQR with a positive attitude, others seem to regard it as just another bothersome, burdensome interruption, and not as a constructive part of an ongoing appraisal process.

The Path to Increased Fiscal Accountability

Several years ago, it became clear that a strong framework of fiscal accountability was a major component of school accountability and an integral part of our overall reform effort. The recent passage of Proposition 98 will, over time, provide the investment resources we need to pay for new elements of our reform plan. However, to make the best use of these resources, we must sustain and expand our efforts to improve our management of all the financial resources supporting our schools. At the beginning of the reform movement, the Financial Management Advisory Committee was appointed in order to provide advice and support for the improvement of fiscal management Several major areas of reform were identified by this committee.

The committee recognized the need to revise the technical aspects of school district budgeting and cost reporting to ensure efficient decision-making based on timely and accurate information. As a result, the Department of Education revised the cost reporting forms and procedures to bring them into consistency with *Generally Accepted Accounting Principles*. The Department has begun a process to provide districts with comparative data on major expenditure areas. A state trustee system has been established for districts which have become insolvent and require emergency loans. Districts which require such loans must undergo a special audit and independent management review, and they must develop an approved fiscal recovery plan.

There is a growing shortage of qualified business management staff and lack of training for appropriate school district officials. In response to this shortage, the Department of Education, in co-sponsorship with the California Association of School Business Officials, the California School Boards Association, and the Association of California School Administrators, has established training programs for Fiscal Policy Teams (i.e., board members, superintendents, and chief business officers) and specialized programs for technical support staff.

There is a recognized need for greater use of computer technology and telecommunications in improving the fiscal management of school districts and county offices of education. The Department of Education, in response, has provided microcomputer software to districts and counties at no, or low cost. Publications have been developed to provide assistance in the use of this software. A small grant program has been established to support the delivery of these systems to local districts, and the first steps have been taken toward greater use of the electronic transfer of fiscal information between school districts, county offices of education, and the Department.

Prudent management of financial resources, even if mundane, is essential for the effective implementation of reform. School districts and county offices continue to need support in the improvement of financial management and business practices. Each year new school board members

are elected, new superintendents are appointed, and new chief business officials and other business office staff are employed. The constant turnover of key staff presents a number of difficulties.

Additional Items for Discussion

* How can training and technical assistance be improved to maintain and enhance the knowledge and skills of local business officials, policy makers, and the staff who provide support for business functions?

* What new techniques and technology can be made available to local business officials policy makers, and office staff to streamline data collection and improve fiscal management?

* What new sources of information on school district financial management and business practices can be made available to local business officials and office staff?

Final Comments

Statistics may not capture the rich texture of schools, but when statistics are used in a purposeful, integrated, and comprehensive accountability program, they are important instruments for implementing and guiding educational reform. The social, demographic, and academic challenges facing the children of California are similar to those found nationally. The appropriate response to these challenges is a program of educational reform which embraces curricular goals, instructional materials, training for teachers and administrators, and assessment. A comprehensive accountability program, including reports of school performance, incentive programs, Program Quality Review, school accreditation, and fiscal management, is an essential instrument for implementing and guiding educational reforms. It is not enough that these accountability mechanisms are now in place and working. They should be critically examined and appropriately modified in order to keep pace with California's changing educational needs.

Educational Assessment: Harnessing the Power of Information to Improve Student Performance[2]

Executive Summary

This paper takes a hard look at assessment practices in California and the nation. It argues that weaknesses in assessment are directly linked to weaknesses in our instructional programs, causing, among other things, our poor showing in international comparisons of achievement. It analyzes the chief weakness--narrowness of focus--in some detail and suggests some corrective options. It then discusses the second most important problem: the urgent need to define performance standards, set targets for student performance, and communicate our progress to the public more effectively. Discussion follows on two other knotty issues that must be dealt with: (1) developing reliable, useful, and meaningful assessments of individual students, and (2) finding better ways to consolidate local and state assessment to reduce duplication while increasing impact. Other issues raised include the need to determine the most appropriate uses of assessment information, to make assessment programs more comprehensive, to obtain more funding for assessment, and to more clearly define state and local roles in standard setting and assessment.

[2] This paper should be read in conjunction with its companion paper on educational accountability.

The Role of Assessment in Accountability

Sound assessment can provide a major impetus to educational reform. First and foremost, assessment drives curriculum, focusing instruction on those aspects of student performance that are most essential and providing a model of good, or bad, instruction. Second, testing programs inform the public about the status and progress of student achievement, garnering public support essential to further progress in educational reform. Third, they inform schools about strengths and weaknesses in student performance, providing the feedback essential to make corrections and steer a more effective course.

District testing programs and statewide assessment both play prominent roles in California. Since 1972, the roles of state and local testing have been separated. The California Assessment Program (CAP) tests are given to all public school students at grades 3, 6, 8, and 12. They are explicitly designed for broad coverage of the instructional program to provide data for program evaluation at the school, district, and state levels and do not provide data on individual student performance. All districts in the state must administer the CAP tests at the designated grade levels, as well as locally developed or selected tests for certifying minimum proficiency as required for high school graduation. Most districts also give standardized achievement test batteries at several grade levels for various purposes: to evaluate students or categorical programs, to gain information about program effectiveness at grade levels not covered by CAP, to compare students with their national counterparts, and to get individual student information for other purposes.

Assessment Reform since 1983: A Beginning

Since the advent of California's educational reform movement, many districts have strengthened their testing programs and several pilot efforts are underway by research organizations, test publishers, and the $(CAS)^2$ Consortium to consolidate testing for local and state reporting. Statewide assessment has also changed in the past six years to support local implementation of California's powerful curriculum in major content areas. CAP added a high-level test at grade 8; a new, more demanding grade 12 test; writing assessment at grades 8 and 12; tests of history social science and science at grade 8; and performance tests of health-related physical fitness at grades 5, 7, and 9. These changes have extended CAP testing to additional grade levels and content areas. More importantly, an extensive program is now underway to refocus the CAP tests in English-language arts and mathematics on the truly critical outcomes in these content areas. Work in progress includes new integrated reading-writing tests and mathematics tests for all current CAP grade levels, as well as grade 10, and history-social science and science tests for grades 6 and 12.

The Golden State Examination (GSE) is another reform-instigated testing initiative with great potential to boost student performance. The GSE is a voluntary end-of-course test that provides incentives for high-level achievement in academic courses required for higher education. It enrolls increasing numbers of students each year--over 141,000 in 1989. The program is poised to expand from mathematics to five other subject areas. Tests in history and economics have been developed with funding provided by the San Diego County Office of Education and tests in biology and chemistry are now being developed with support from the Milken Foundation. Full development and implementation of the GSE will require additional funding.

The Testing Reform We Really Need

Educators now recognize that most testing instruments fall far short of the mark in measuring the types of student performance that really count. Despite efforts at the state and local levels, most of the new and revised tests implemented so far have only partially supported educational reform. In fact, testing has, for the most part, actually obstructed progress in implementing reform. This is not because the critical outcomes of education have not been identified. The business community has

clearly specified what skills graduates need. A recent report entitled *Workplace Basics: The Skills Employers Want*[3] identifies the following seven skill groups:

* *Learning to Learn.* [...the ability to absorb, process and apply new information quickly and effectively.]

* *Listening and Oral Communication.*

* *Competence in Reading, Writing, and Computation.* [...use of these skills on the job will require additional proficiency in summarizing information, monitoring one's own work, and using analytical and critical thinking skills.]

* *Adaptability: Creative Thinking and Problem Solving.*

* *Personal Management: Self-Esteem, Goal Setting, Motivation, and Personal/Career Development.* [...Taking pride in work accomplished, setting goals and meeting them, and enhancing job skills to meet new challenges.]

* *Group Effectiveness: Interpersonal Skills, Negotiation, and Teamwork.*

* *Organizational Effectiveness and Leadership.* [Employers want employees to have some sense of where the organization is headed and what they must do to make a contribution...who can assume responsibility and motivate co-workers.]

California's curriculum frameworks call for instruction that empowers students in these ways, but the narrow scope of assessments does not support that instruction. Current assessments do not challenge students to think, or do anything to encourage teachers to foster critical thinking and productive problem solving in the classroom. As Lauren Resnick, Director of the Learning Research and Development Center at the University of Pittsburgh, has pointed out, when we limit the scope of assessment, we narrow the scope of instruction in our schools. She postulates:

* You get what you assess; and

* You do not get what you do not assess.

Put in the more abbreviated vernacular.....*WYTIWIG*, or *What You Test Is What You Get!*

Unfortunately, we have not been testing for the powerful outcomes we most desire, but have focused instead on more trivial and easily measured results. Most of the tests now in use reflect a narrow, traditional conception of assessment and accountability. The original rationale for adopting the multiple-choice tests that now prevail was one of efficiency and economy, bolstered by the behaviorist view that complex skills and understanding were *bolted together* piece by piece from discrete subskills and bits of information. We now know that complex skills and understanding are not built up in this way and that the economy of machine-scorable methods is a false one. In fact, this kind of assessment, by focusing instruction on subskills and disaggregated, decontextualized bits of information has a perverse impact on student learning.

The negative impact of narrow testing and instruction is especially devastating for students in compensatory education programs. Many of those students spend their school lives doing remedial

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[3] A 1988 report of the American Society for Training and Development and the U.S. Department of Labor, Employment, and Training Administration.

exercises designed to teach them the *basic skills*. Not surprisingly, they see little connection between their real-world interests and the bite-sized, unrelated facts and skills they are expected to master in school. Ironically, the misplaced focus on the so-called basics is doubly counterproductive; these students are robbed of exposure to the rich, enabling curriculum that will prepare them to be productive and successful citizens, and they also fail to learn the skills that make up their meager educational diet. Neither their classroom drill and practice nor the commercial, standardized tests they are given encourage students to think or to bring their skills and knowledge to bear on real problems. Unfortunately, the traditional testing mode stands in the way of implementing instruction aimed at the challenges they will face in life outside the classroom.

To equip our students for citizenship, further education, and productive lives, we must broaden the scope of assessment to support instruction focused on challenging and engaging activities. *Authentic*, performance-based assessment gives students opportunities to show what they can do and, in the process, supports instruction that fosters their abilities to do such things as communicate in speech or writing, create or construct an argument, or use their knowledge to solve real-life problems. The power of more authentic forms of assessment to change instruction for the better can best be illustrated from our experience with California's direct writing assessment. We have seen literally thousands of teachers take advantage of staff development opportunities and clamor for the opportunity to score essays for the state–itself a valuable form of staff development. A survey by the National Center for the Study of Writing shows that teachers now assign more writing, and a greater variety of writing to their students. The assessment results provide proof that teachers who assign more writing and follow the best instructional practices get better writing from their students.

Major Issues in Assessment Reform

We have already discussed the most fundamental issue in reforming assessment: the need to move assessment from a narrow, passive system to an active, performance-based one. There are other problems with educational assessment in California and the nation, but all of them are tied to the fundamental problem of testing method and focus. Four relatively general and philosophical issues are described below: how to put assessment in California on a performance basis, how to develop performance standards and set targets, how to give individual students the information they need, and how to coordinate and consolidate local and state assessment. A number of more practical issues are woven into this discussion; for example, the balance and scope of testing in the schools, the proper uses of and consequences of test results, and the resources devoted to assessment vis-a-vis the payoff for that investment.

How to get Authentic Performance-Based Assessment in California

State-Level Efforts. The California Assessment Program has made significant progress in moving to a student production mode of testing. The direct writing assessments at grades 8 and 12 are widely cited as proof that better assessment leads to better instruction and better learning. That assessment program needs to be expanded to cover more students by including other grade levels. It also needs a broader, multidisciplinary focus so that students are asked to write more in history, science, and mathematics. Furthermore, assessment in the curriculum areas of mathematics, history, and science needs to become more authentic. CAP has set the course for open-ended assessment in mathematics with publication of *A Question of Thinking, A First Look at Students' Performance on Open-Ended Questions in Mathematics*. Pilot efforts in hands-on science assessment have been carried out for the last two years. CAP is ready to go statewide in the spring of 1990 on a state/local collaborative basis with this assessment in conjunction with the California Science Project.

Performance Assessment in the Schools and Districts. In many ways it is more important that performance assessment be implemented at the local level than in the California Assessment Program. CAP can be a model and spur to local testing reform, but performance assessment will only pay off

in the long run as it transforms the focus and nature of classroom instruction. The magnitude of the payoff calls for a massive statewide staff development effort focused on performance assessment in the classroom. This could take many forms. It needs to be bold and yet it needs to provide flexibility and incentive for schools and districts to build their own strategies.

Some elements of a plan can be suggested. First, it is most fortuitous that California has several functioning networks of outstanding teachers under the aegis of the well-established California Writing Project, California Mathematics Project, California Literature Project, and the new California Science Project. Each of these networks is a rich resource for traditional staff development, and more importantly, they are already working with the California Assessment Program in developing CAP's performance assessments. The teachers in the California Writing Project are actually the authors of CAP's writing assessment, and the grade 12 open-ended mathematics assessment has drawn substantially upon the work of teachers in the California Mathematics Project. This type of collaborative relationship is not only mutually satisfying at the moment, but also portends an optimistic scenario for the future--CAP benefits from the best thinking of the best teachers, and the teachers get experience in developing authentic assessment, experience that they can pass on to their colleagues.

Second, CAP's performance assessment work in history, mathematics, and science offers excellent opportunities for *piggy-backing* by districts. Until such time as CAP's performance assessment touches all students in a grade level at a school, the emphasis will be on sampling. The sampling plan to be launched in 1989-90 in grade 6 history and science calls for a light sampling of a few students in all schools. To extend the impact of this effort in science, for example, schools could make arrangements with the local California Science Project site or with some other county or regional consortia to train their teachers in hands-on performance assessment. The teachers could then administer the performance tests to all sixth grade students in their schools. Other approaches are worthy of consideration as well; for example, the pyramidal strategy used by New York State last spring, whereby all fourth grade students were assessed with hands-on activities. If one considers the invaluable staff development that teachers gain as part of developing, administrating, and/or scoring performance exercises, the cost of such assessment becomes a bargain.

Credibility of Assessment Results. A recent national report has raised serious questions about the test results that are being reported to parents and boards of education across America. It seems that nearly all students and districts claim to be above average! Citizens are outraged, as they should be. The most parsimonious explanation has two parts. First, it is clear that test questions are too well known, even in classrooms run by teachers with integrity. Second, the estimated national norms collected by test publishers can only be updated every seven to ten years. Hence, both real progress and counterfeit progress combine in unknown ways to move everyone above a static national average.

We need to design assessments which the public can trust. This will require more serious attention to test security--teachers must not be able to browse casually through a test and incorporate specific knowledge in their teaching. Assessment programs must move toward the use of large pools of questions and alternate test forms as a matter of simple respectability.

Fundamental restructuring of assessment to focus on student performance is the only reasonable solution to this problem. In an authentic assessment system, we actually want students to know what the task is so that they and their teachers can focus efforts on practicing for it. An authentic task is worth practicing. It is such a large and complex task that students cannot develop mastery simply by mere exposure. The problem with students preparing specifically for tests lies in the shallowness and superficiality of our existing assessment instruments. For example, mathematics tests which measure simple recall can be easily learned, at least in the short run, for the sake of a test. In contrast, learning to solve more complex real-life problems can be the legitimate object of serious study, a seamless blending of instruction and preparation for the test. Movement toward performance

assessment wwil not eliminate the *coaching* problem, but it will reduce it to a manageable level, and will increase learning that doesn't evaporate after the testing period.

Making the System More Comprehensive. Testing in California is now a patchwork. We give millions of tests, but they tend not to drive the system in the right direction and we lack the information we need to know how well we are doing. Furthermore, there is too much testing in some areas and not enough in others. For example, reading and mathematics are heavily tested throughout the system, but science and history are tested at only one grade level in CAP; and it is safe to say that very few districts systematically assess these content areas. The assessment which has proven to have the most impact of all, the direct writing assessment is given at only two grade levels. Finally, the most obvious gaps in the system are at the high school level. The whole secondary system is organized on a course-by-course basis, yet there is virtually no assessment in high school. Some districts around the state have instituted their own end-of-course testing programs. At the state level only the mathematics portion of the Golden State Examination has been funded. Both local end-of-course testing and the GSE have proven to be very effective in helping teachers focus their own instruction, and in giving students a target to shoot for and a way of measuring their progress.

Resources for Assessment. At the present time about one-tenth of 1% of the annual state budget for education is devoted to testing and assessment. It has become a truism, especially in this era of school reform, that assessment is a most potent and cost-effective investment. It obviously would be short-sighted to think that public education could be improved substantially without better teachers, better textbooks, and the other necessities; but, on a dollar-for-dollar basis, assessment may get more action--and more focused action--than any other lever available to school reformers. It has been suggested that the expenditures for assessment could prudently be increased ten-fold. This would still take only 1% of the budget and happens to be about what it would take to implement the type of assessment that would drive the system in the right direction.

Defining Performance Standards and Setting Targets

If the impact of accountability lies in its power to focus attention on what is important, it can only accomplish that purpose when goals are specified. We have had educational goals for years, but only vague and general ones. We have not developed a system to let us know if we are reaching those goals. We have had assessment and testing programs, but they only indicate, at best, whether we are making progress or losing ground. Since we have not set specific measurable targets, we don't know how far we are from where we want to be, or the rate of our progress. We have obviously not had common agreement on what students should know and be able to do when they move from the 8th to the 9th grade, for example, or when they graduate from high school. Students need to know how they measure up, how ready they are to undertake the work demands of the next level of education. Schools need to know how effective their programs are in preparing their students for the next hurdle. Exit or readiness testing needs to be installed at these critical junctures, but the success of these testing programs will depend on the quality and clarity of the standards that must be set first.

It is crucial that we develop clear and understandable ways of indicating and communicating progress, for example, the proportion of students who are able to write an essay which meets certain distinct criteria. We could then report confidently on our progress to the public, a necessary step in galvanizing support for public schools. School personnel would be clear on the standards and free to use their ingenuity to devise ways of reaching their targets. Many ways could be proposed for defining such performance standards and setting targets. One possibility is outlined below.

Defining Performance Standards. The first task would be to take general statements of expectations of student learning in key academic subject areas, especially reading, writing, math, science, and history, and translate them into performance-based statements. A single set of standards would be

defined for each content area, indicating several levels of proficiency and student accomplishment. The standards would be brief and general enough to be easily understood and communicated, yet specific enough to guide the development of appropriate assessment exercises. They would be real-life oriented and focused on what students can *do* as a result of their learning. They would be action-oriented, rather than focused on facts and inert knowledge. To demonstrate performance of a given standard, students would have to show that they could use their knowledge to solve real-world problems, or to create something useful such as a proposal, solution, argument, critique, model, or design.

The standards could be pitched at approximately five levels of competency or difficulty. The focus of assessment would be to determine the highest standard that each student has attained. The reporting of assessment information would focus on the proportion of students at each level and the increase (or decrease) in that proportion since the last assessment.

The National Assessment of Educational Progress (NAEP) has developed a system which resembles the one described here. National samples of students are assessed and results are reported for five levels of proficiency. In the area of reading, for example, the levels range from *rudimentary* through *advanced*. Table 1 displays these five levels and the proportion of students reaching each level as of 1984, the last assessment reported.

The system discussed here builds upon but differs from NAEP in one key respect. The NAEP levels were developed post-hoc, that is after pools of multiple-choice items were used to assess national samples of students. The relationship between the actual assessment and the performance-sounding character of the descriptions is therefore very tenuous. The process must begin with performance standards, which in turn, would indicate the nature of the assessment devices that must be developed to assess those standards.

Setting Targets. The other aspect of this recommendation is setting goals, i.e., targets for increased student achievement. This is both a technical and a political process. The political part means that a wide cross-section of constituencies must be involved in the process. The technical aspects include the need to relate these standards and therefore the proportion of students who meet them, especially at the high school level, to the demands of the real world. A wide range of information exists about the reading, mathematics, and problem-solving abilities needed for success in college or the world of work. Setting targets can be largely judgmental at the beginning; however, as the research and validating studies are conducted, the knowledge base will improve. The targets would need to be reconsidered as new information becomes available. We could begin with information from key studies such as *Workforce 2000* from the Hudson Institute. Tables 2 through 4 illustrate how this information might be displayed to assist in both the target setting and the public reporting processes.

Targets would apply to both the state and local levels (and possibly flow from national targets). Table 1 shows how the information might be reported and how the targets can be displayed. It also shows how the state might set minimum levels of improvement; districts and schools could then decide whether to do just their share of this growth, or to go beyond it. The table could even be adjusted to show exactly how many students in a school would need to meet a higher standard in order to achieve the target.

Although several levels of proficiency could be assessed and reported, the state would focus on the two highest levels. The highest level would be equivalent to the level of skills needed for success in university study; the second would focus on the relatively high level of skills needed to succeed in the increasingly technological world of work.

Responsibility for Setting Standards. Any discussion of standards must deal with the local-state responsibility issue. Whose responsibility is it to set minimum standards for high school graduation,

for example? It is generally agreed that the existing minimum proficiency testing requirements, and programs to implement it, are not working. This may be because the focus is on only the absolute minimal level of competency, which affects relatively few students in most districts. What about the great bulk of the students? Can some system be devised whereby all students are challenged, using the various levels of competency represented by the performance standards? The answer to this question will reflect our assumptions about the meaning of a high school diploma.

The Dilemma of Individual Student Assessment

California school districts spend millions of dollars each year obtaining achievement scores for individual students. Ever since commercially published nationally standardized tests came into widespread use in the 1920s, it has been assumed that standardized achievement testing is a necessary accoutrement of any self-respecting school district. Many district personnel and testing experts are now wondering whether this is a worthwhile expenditure. The problem is twofold: a confusion of purposes and an inadequacy of existing assessment methods.

First, a word about purposes. There are good reasons why assessment must be focused on individuals as well as on groups. Assessment is a natural part of learning. Students assess their progress daily, if not hourly, and teachers in their planning and guiding role, continuously evaluate them. But beyond this daily learning-assessment routine, students have a need, perhaps even a right, to know how they are doing--in relation to the standards held by the adult world, and in relation to what they need to learn to succeed at the next educational level. Some have said that this need can be met by a formal evaluation process at only a few junctures, perhaps at the end of the 8th grade and at the end of the 11th or 12th grades.

It is part of the conventional wisdom that external achievement tests help teachers plan better ways to help students. National surveys conducted by the Center for Research on Evaluation, Standards, and Student Testing at UCLA consistently confirm our worst suspicions: Teachers do not use standardized test results. Ironically, teachers say the results are needed by the administration; administrators say that testing is not much use to them, but that the teachers really need it!

The largest perceived need for individual scores is linked to federal program evaluation requirements, especially those for Chapter 1. It is widely believed that testing is required for both identification and evaluation of Chapter 1. This is only partially true. Districts are, in fact, free to use a variety of methods, including more informal and authentic processes, to identify eligible students. This good news is small consolation because both federal law and regulation require, for national evaluation purposes, the *annual* assessment of *all* participating students with a test which yields nationally normative results. At this point, all tests with national norms are built on a false learning and testing paradigm. Instructionally harmful testing practices are required by the law of the land!

This over-emphasis on individual testing is very important. The problem, as spelled out earlier, is that narrow testing has a negative impact on instruction. We know that students in Chapter 1 programs nationwide are condemned to meaningless drill on so-called *basics* because that is what the tests measure. What they need is a rich diet of engaging, literature-based reading instruction, the opportunity to learn to write by writing--not filling in blanks on worksheets, and the chance to work with other students to learn how to solve problems (the way most of us learn how to solve problems--by working with and watching others who know how to do it!)

The problem is much the same with tests used to certify competency for high school graduation; existing tests focus on minimums based on rote, mechanical learning. Students who do poorly on such exams are restricted to a narrow drill and practice regimen until they pass the test, using as many attempts as necessary. In most cases this test-teach-test process does not help them develop the skills that they need in the real world.

Other purposes for individual student testing may be more a matter of convention than necessity. Tests are often justified on the basis that they provide a national framework for interpreting students' progress. There are two problems with this assumption: First, the accuracy of those estimated national norms is coming under severe criticism; the second issue is one of relevance--even if the norms were accurate, why would one want to know if a student is able to perform the relatively unrelated skills or recall the unrelated *facts* tested by most commercially available standardized achievement tests?

The use of testing as a motivational device is not new; indeed, most classroom testing may actually have no other function than the proverbial: *You better study this because it's going to be on the test.* The Golden State Examination, however, is the only program in California, if not the nation, which has the positive motivating power of recognition written into its enabling legislation. This program, a part of SB 813, has been proving its value in the area of mathematics as a tool to develop and monitor statewide standards while it motivates students to try harder and learn more. It needs to be expanded to give a curricular push to the other areas of high school curriculum, especially the areas mentioned in its legislation: U.S. history, English literature and composition, laboratory sciences, foreign languages, and health sciences.

To recapitulate, on the one hand, the dilemma of individual assessment is a matter of confusion about purposes. Individual assessment is simply not needed for some purposes, it fosters the wrong kind of instruction when used for others, and for many purposes it is simply a waste of time--the collection of information nobody uses or cares about. On the other hand, we know that learning is an individual affair, and that students need to know how well they are doing.

The problem and the solution lie in the focus of the assessment. Students need tests that focus on meaningful, whole, lifelike topics that are related to what they are learning in powerful, engaging instructional programs. They need to know: *How am I doing in learning worthwhile tasks?* Teachers could use the findings from this kind of testing because the results would relate directly to their teaching goals. The problem is that this kind of information doesn't come from a 40-minute test based on 50 multiple-choice questions. It only can be derived from an assessment system where students get the chance to struggle with real problems. The papers cannot be scored by a machine; they must be read by a knowing, thoughtful adult. Scoring this kind of assessment is expensive--but not as expensive as it might appear. Scoring is not just part of the testing, but an integral part of the overall instructional process.

Who Is Responsible? The matter of responsibility needs to be discussed. Whose responsibility is it to ensure that testing supports high quality instruction? Does the state have a regulatory role? There is no clear statutory basis for that role now. It has been suggested that tests be treated as textbooks and that the state approve a list of tests for local use, or least for use in evaluating Chapter 1 programs. Is this the best way to change the nature of the tests supplied, or are there other incentive systems that would be more effective?

Consolidating State and Local Testing

School districts give a variety of tests for a variety of purposes as discussed earlier. Several pilot programs are underway to consolidate this testing so that only one test can be given each year rather than several--yielding more coherent and useful information. Over 60 districts are members of the largest project, the $(CAS)^2$ Consortium, which has successfully merged CAP tests and tests which yield individual scores at several grade levels. This system satisfies state requirements and provides individual information to students and teachers. Other pilot projects include those carried out by CTB/McGraw Hill, the Psychological Corporation, the WICAT Corporation, and a joint venture of UCLA and the University of Chicago funded by the U. S. Department of Education.

Several questions face the state and the districts at this point. Some lean toward the operational: How can the benefits of the most developed consolidated assessment model, $(CAS)^2$, be spread to other districts? How can other models be developed which meet the differing testing needs of other districts?

Other questions are more difficult to answer. They relate to the fundamental assumptions underlying the need for assessment information at the school and district levels. For example, what kinds of local assessment practices best support curriculum reform? What kind of assessment will help students to understand their strengths and weaknesses, and help their teachers know how to motivate them and tailor the instructional programs to meet their needs? Can any type of external assessment, administered once a year, even pretend to be useful to either the students or the teachers? Can information which teachers collect as a natural part of the instructional process be codified and used in the accountability process? It would be a real coup if this could be done, since assessment for learning and assessment for accountability now live in different worlds. Assessment for learning tends to be more authentic, but is not systematically collected, aggregated, or reported. External assessment, or assessment for accountability, in contrast, is designed to be aggregated and reported. Unfortunately, it often provides only a weak measure of what is learned, is not useful to teachers, and is forgotten by students as quickly as it is learned. These philosophical problems must be confronted along with the structural and procedural issues in developing coherent consolidated assessment models.

Items for Discussion

The accountability cluster group has a heavy responsibility. The four issues summarized above should provide all participants with a common background for discussion. The following set of questions are proposed to help focus those discussions as they move from a general analysis of the problems to a specific set of recommendations:

* How can we gain the full and enduring support of school personnel and the public to carry out a fundamental reform of assessment?

* How should we go about defining performance standards and setting targets for student achievement? Who should be involved and how would their roles be defined?

* What is the best way to provide individual students with the information they need about their overall progress and their strengths and weaknesses?

* What are the various responsibilities of the state and the districts for evaluating students and programs? How can state and local efforts best be consolidated?

* What are the proper uses of assessment results? How can they be used as incentives for students and teachers?

* How much of the state and local budgets should be spent on assessment?

* How can assessment be more comprehensive and balanced across the grade levels and content areas to maximize its impact?

* What is the role of the state in ensuring (1) the local and statewide use of the most effective and appropriate assessment instruments and (2) the credibility of the results reported to the public?

Table 1
Illustrative Annual Statement of Results
Reading, Age 17/Grade 12

NAEP Standards		Nation '90	Nation '92	Nation '94	Nation 2000	State '90	State '92	State '94	State 2000	District '90	District '92	District '94	District 2000	School '90	School '92	School '94	School 2000
Advanced Readers who use advanced reading skills and strategies can extend and restructure the ideas presented in specialized and complex texts. Examples include scientific materials, literary essays, historical documents, and materials similar to those found in professional and technical working environments. They are also able to understand the links between ideas even when those links are not explicitly stated and to make appropriate generalizations even when the texts lack clear introductions or explanations. Performance at this level suggests the ability to synthesize and learn from specialized reading materials.	350	5*	(6)	(7)	(10)	3	(4)	(5)	(8)								
Adept Readers with adept reading comprehension skills and strategies can understand complicated literary and informational passages, including material about topics they study at school. They can also analyze and integrate less familiar material and provide reactions to and explanations of the text as a whole. Performance at this level suggests the ability to find, understand, summarize, and explain relatively complicated information.	300	39	(41)	(43)	(49)	33	(35)	(37)	(43)								
Intermediate Readers with the ability to use intermediate skills and strategies can search for, locate, and organize the information they find in relatively lengthy passages and can recognize paraphrases of what they have read. They can also make inferences and reach generalizations about main ideas and author's purpose from passages dealing with literature, science, and social studies. Performance at this level suggests the ability to search for specific information, interrelate ideas, and make generalizations.	250																
Basic Readers who have learned basic comprehension skills and strategies can locate and identify facts from simple information paragraphs, stories, and news articles. In addition, they can combine ideas and make inferences based on short, uncomplicated passages. Performance at this level suggests the ability to understand specific or sequentially related information.	200																
Rudimentary Readers who have acquired rudimentary reading skills and strategies can locate brief written directions. They can also select words, phrases, or sentences to describe a simple picture and can interpret simple written clues to identify a common object. Performance at this level suggests the ability to carry out simple, discrete, reading tasks.	150																

Note. All figures are hypothetical and are printed purely for illustrative purposes.

* Proportions of students meeting standards. Numbers in parentheses indicate targeted growth.

Table 2
Illustrative Performance Standards and Scales
Reading, Age 17/Grade 12

NAEP Standards	CAP Equivalent	CASAS Equiv.	SAT - Verbal	ASVAB	GATB	GED
Advanced 350	365					
Adept 300	315					
Intermediate 250	265					
Basic 200	216	215				
Rudimentary 150	160					

Note. All figures are hypothetical and are printed purely for illustrative purposes.

Table 3
GED Language Levels and Occupational Implications

NAEP Standards		GED Language Levels	Illustrative Job Tasks	Illustrative Occupations	Projected Net Increase 1984-2000*
Advanced	350	**Level 6** Reads literature, book and play reviews, scientific and technical journals, abstracts, financial reports and legal documents. Writes novels, plays, editorials, journals, manuals, critiques, poetry, and songs. Converses in the theory, principles, and methods of effective and persuasive speaking, voice and diction, phonetics, and discussion and debate. (Level 5 same as level 6.)	Directs editorial activities of newspaper and negotiates with production, advertising, and circulation department heads. Conducts and oversees analyses of aerodynamic and thermodynamic systems and aerophysics problems to determine suitability of design for aircraft and missiles. Advises corporations concerning legal rights, obligations, and privileges. Introduces various types of radio and television programs, interviews guests, and acts as master of ceremonies. Writes service manuals and related technical publications concerned with installation, operation, and maintenance of electrical and mechanical equipment. Assists legal representatives in preparation of written contracts covering other than standardized agreements.	Lawyers, judges, and natural, mathematical, or computer scientists	
Adept	300	**Level 4** Read novels, poems, newspapers, periodicals, journals, manual, dictionaries, thesauruses, and encyclopedias. Prepare business letters, expositions, summaries, and reports using prescribed format and conforming to all rules of punctuation, grammar, diction, and style. Participate in panel discussions, dramatizations, and debates. Speak extemporaneously on a variety of subjects.	Composes letters in reply to correspondence concerning requests for merchandise, damage claims, credit information, delinquent accounts, or general information. Compiles lists of prospective customers to provide leads to sell insurance. Inspects and tests storage batteries to verify conformity with manufacturing specifications. Repairs and overhauls different types of automotive vehicles.	Teachers, librarians, counselors; management related, writers, artists, entertainers, athletes, other professional, technical, technician; marketing and sales	
Intermediate	250	**Level 3** Read a variety of novels, magazines, atlases, and encyclopedias. Read safety rules, instructions in the use and maintenance of shop tools and equipment, and methods and procedures in mechanical drawing and layout work. Write reports and essays with proper format, punctuation, spelling, and grammar, using all parts of speech. Speak before an audience with poise, voice control, and confidence using correct English and well-modulated voice.	Types letters, reports, or forms. Renders personal service to railroad passengers to make their trip comfortable. Keeps records of products returned to manufacturer to credit customer's account, to replace damaged merchandise, or to file damage claims. Drives truck over established route to deliver, sell, and display products or render services. Services various automotive vehicles with [illegible], lubricants, and accessories.	Blue-collar worker supervisor; administrative support; construction trades; plant, system, and service occupations; electronics installers; and repairers	
Basic	200	**Level 2** Passive vocabulary of 5,000-6,000 words. Read at rate of 180-215 words per minute. Read adventure stories and comic books, looking up unfamiliar words in dictionary for meaning, spelling, and pronunciation. Read instructions for assembling model cars and airplanes. Write compound and complex sentences, using cursive style, proper end punctuation, and employing adjectives and adverbs. Speak clearly and distinctly with appropriate pauses and emphasis, correct pronunciation, variations in work order, using present, perfect, and future tenses.	Announces availability of seats and starting times for show. Delivers messages, documents, and packages to offices. Tends machines and equipment that grind, mix, form, and cook raw fish to make fishcakes. Fills requisitions, work orders, or requests for material, tools, or other stock items. Serves food to patrons at counters and tables of dining establishments.	Precision production, agriculture, forestry, fishing, transportation and material moving, extractive workers, machine setters, and operators	
Rudimentary	150	**Level 1** Recognize meaning of 2,500 (2- or 3-syllable) words. Read at rate of 95-120 words per minute. Compare similarities and differences between words and between series of numbers. Print simple sentences containing subject, verb, and object, and series of numbers, names, and addresses. Speak simple sentences using normal word order, and present and past tenses.	Delivers telephone directories to residences and business establishments, following oral instructions or address list. Obtains reels of motion picture film from stock as specified on shipping order. Pastes labels and tax stamps on filled whiskey bottles passing on conveyor; looks at bottles to ascertain that labels have been correctly applied, and packs bottles in cartons.	Hand working occupations; helpers; laborers	

Note. **The relationship between the NAEP Standards and the GED language levels has not been established and the correspondence implied in this table is purely hypothetical and illustrative. The information pertaining to GED language levels and illustrative job tasks and occupations is abstracted from the technical appendix to Workforce 2000, a report of the Hudson Institute, 1987.**

* **Information from Workforce 2000 and other studies could be used to project educational needs related to economic and occupations changes.**

Table 4
DRP Reading Levels and Illustrative Reading Materials

NAEP Standards		DRP Equivalent	Illustrative Passages	Illustrative Reading Materials
Advanced	350	81	Jefferson's preference for an agrarian society and his idealization of the independent farmer reflected a conviction that representative government required a secure and relatively prosperous economic base to function successfully. He perceived the farmer as economically independent, and thus unlikely to surrender his judgment as a citizen to the influence of demagogues. His dislike an distrust of cities derived from a conviction that urban conditions, especially for the poorer classes, forced men into such a bitter struggle for sheer self-preservation that their natural moral sense could not be relied upon to produce social harmony to guarantee responsible citizenship.	Future Shock Profiles in Courage California Ballot Pamphlet arguments Gulliver's Travels
Adept	300	64	Wall paintings are especially vulnerable to atmospheric change. Archaeologists know this. Hence they try to discover, before opening a tomb, whether they will find morals. Special tools have been designed for this purpose. One of the most useful is a kind of camera that can be dropped into the ground before the digging starts. If the camera indicates the presence of wall art, scientists can prepare to take steps to preserve the painting as soon as it is reached.	Los Angeles Times San Francisco Chronicle The Autobiography of Malcolm X War and Peace
Intermediate	250	56	The people of Greece used the alphabet of the Semites. At first the Greeks wrote from right to left and left to right in alternating lines. The Greek name for this system of writing came from their words for "ox" and "turn." The method reminded them of oxen going back and forth, plowing a field. Eventually, the Greeks wrote only in one direction, as we do: people do now.	California Driver's Handbook Treasure Island The Grapes of Wrath The Old Man the Sea
Basic	200	47	The part of a beach between high and low tide is called the middle beach. It is home to many plants and animals. But life on this middle beach is hard. There is no protection against the wash of the oncoming waves. Some animals survive by digging holes in the sand. They can stay in their homes under ground. The undertow will not pull them out to sea. They are safe.	Twenty thousand leagues under the Sea Peter Pan Super Fudge
Rudimentary	150	39	A bird's wings are well-shaped for flight. The wing is curved. It cuts the air. This helps lift the bird. The feathers are light. But they are strong. They help make birds the best fliers. A bird can move them in many directions. Birds move their wings forward and down. Then they move them up and back. This is how they fly.	Curious George Lady and the Tramp Amelia Bedelia Frog and Toad are friends

Note. **The relationship between the NAEP Standards and the DRP reading levels has not been established and the correspondence implied in this table is purely hypothetical and illustrative. The information pertaining to DRP language levels and illustrative reading materials is drawn from Readability of Literature and Popular Titles: Volume I, published by TASA, Inc., in 1988 and from readability analyses conducted for the California Assessment Program by The College Board.**

THE NUMBER 1000:
A Proposal to Measure School Performance with a Single Accountabilty Index

Single Accountability Index

Attention is currently focused on the question of educational quality and the establishment of national performance goals. Policy makers are calling on educators to be more accountable, and educators are responding. California has an established accountability system which sets specific targets for the state and annually provides each school with information on performance in comparison to established performance targets, performance of similar schools, and performance of all schools statewide. A similar system could work on a national basis.

The wealth of educational performance information may be overwhelming and make it difficult to draw conclusions. Therefore, it may be desirable to combine many accountability indicators into a single number to gauge the health of the educational system at local, state, and national levels. This index would be based on real-world performance levels where a higher performance rating for each component indicator reflects a higher percent of students scoring above the set criterion. This index would provide a quick way to measure performance and a simple way to compare schools, states, and eventually nations. Conceptually this index would be similar to the *Dow Jones Industrial Average* with a base-year mean of 1000. Index values in following years would be compared to this base-year value of 1000, and year-to-year improvement could be examined. These comparisons could be made for each school, state, and the nation.

California currently collects information on over 40 quality performance indicators at the high school level. An annual report, *Performance Report for California Schools*, is sent to each school and provides information on that school's improvement (from base year) and current performance on all quality indicators. A California Accountability Index (CAI) is currently being developed. It will integrate information from several of these indicators into a single number. Each indicator will measure the percent of students who meet or exceed a set criterion (e.g., the percent of students scoring above a set value on a test, the percent of students completing specific courses, the percent of students attending college). Since the CAI assesses the *percent above* certain levels on various indicators, the educational goal in California is to increase the percent of students meeting each of these criteria.

Grade 12 was chosen to illustrate the construction of the CAI. Fifteen indicators from grade 12 have been selected to comprise the index. Each indicator is weighted based on the accuracy of the data and the validity of the indicator as a measure of school performance. Indicators were selected which, in combination, assess the performance of all students at a school and do not focus on one segment of the student body. As more data become available, other indicators will be explored and added to the index.

The 15 CAI indicators are organized into four logically associated clusters. The table which follows illustrates how *percent above* scores for a sample school are weighted and transformed into CAI scores for 1988 (base year) and 1989. Note how the school improved in certain areas and how this affected the index value.

Actual statewide averages on existing performance indicators are used to estimate CAIs for other years based on a state value of 1000 in base year 1988. Increased educational performance in California is reflected in the estimated CAIs shown below.

		Base Year	
	1984	1988	1989
Estimated Statewide CAI	827	1000	1055

A similar index, based on fewer indicators, could be developed at the national level. In order to develop such an index, various achievement tests used by different states need to be equated to a common scale. An appropriate choice is the National Assessment of Educational Progress (NAEP) scale. In preparation for a national accountability system, California is in the process of equating CAP

scores to the NAEP scale. California collects data on other indicators for which there are national equivalents (e.g., SAT, dropout rate). As more indicators become available nationwide, a more sophisticated national index could be created.

The CAI will be developed for other grade levels. Accountability indicators under consideration include:

Grades 3 and 6	Grade 8
CAP Reading - Advanced Level	CAP Reading - Advanced Level
CAP Reading - Adept Level	CAP Reading - Adept Level
CAP Mathematics - Advanced Level	CAP Mathematics - Advanced Level
CAP Mathematics - Adept Level	CAP Mathematics - Adept Level
	CAP Direct Writing - Adept Level
	CAP History and Social Science - Adept Level
	CAP Science - Adept Level
	Course Enrollment - Algebra
	Course Enrollment - Science
	Dropout Rates (when available)

The CAI will be used to gauge progress in schools, districts, counties, and the state. School progress will be based on the highest grade in the school as this best represents the cumulative effects of the school. An overall CAI will be reported for each district, each county, and the state. These overall CAIs will be calculated by applying the following weights (in parentheses) to the average district CAIs based on the performance of grades 3 (10%), 6 (10%), 8 (30%), and 12 (50%) inclusive. Higher grade levels are weighted more because they represent the cumulative effects of the education system and the CAI components contain more details about the system.

California will annually report CAI scores and the quality indicators that make up the index to each school in the *Performance Report for California Schools*.

California Accountability Index

Grade 12, Base Year 1988

Sample Data for the State and One School

	Weight	"Percent Above" Scores		
		State	School	
		1988	1988	1989
I. Achievement Cluster (exact criteria to be defined)				
1. CAP Reading - Advanced Level	5	24	37	42
2. CAP Reading - Adept Level	10	50	67	70
3. CAP Mathematics - Advanced Level	5	24	33	44
4. CAP Mathematics - Adept Level	10	49	62	70
5. CAP Direct Writing[1] - Adept Level	10	49	57	53
6. CAP History/Social Science[2] - Adept Level	5	50	60	65
7. CAP Science[2] - Adept Level	5	49	63	67
Cluster Weight	50			
II. College Bound Cluster				
8. SAT Verbal (scores of 450 or better)	5	14	25	29
9. SAT Quantitative (scores of 500 of better)	5	15	25	27
10. Advanced Placement (scores of 3 or better)	8	14	30	24
11. A-F Course Requirements (% completing)	6	28	33	51
Cluster Weight	24			
III. Dropout Cluster				
12. Three-Year Dropout Rate (% not dropping out)	20	14	95	96
Cluster Weight	20			
IV. Placement Cluster				
13 Vocational Education Placements[3] (% completing course sequence and being placed in related job)	2	--	--	--
14. Community College Attendance Rate[4] (% of graduates attending California community colleges)	2	33	32	32
15. College Attendance Rate for University California (UC) and California State University (CSU)[5] (% of graduates attending California public colleges)	2	17	18	19
Cluster Weight	6			
California Accountability Index		**1000**	**1113**	**1160**

Base Year calculations involve standardizing the "percent above" scores, applying weights, averaging the results, and standardizing the averaged scores to have a statewide mean of 1000 and standard deviation of 100. In subsequent years, score conversions involve using base year means and standard deviations.

1 Direct writing scores are available from 1989. Scores for 1988 were estimated for illustrative purposes.
2 History/Social Science and Science tests are being field tested. Scores were estimated.
3 Vocational education placement data are not yet available. Scores could not be estimated.
4 Community college attendance rates will be reported in 1990. Scores were estimated.
5 College attendance rates for UC and CSU are available for 1989. Scores for 1988 were estimated. This indicator will be expanded to include private colleges and out-of-state colleges when data are available.

Curriculum

Executive Summary

Curriculum reform is at the heart of the renewed effort to improve public school education at all levels. The curriculum, the ideas that students learn, determines the value and benefit of an educational experience. This paper discusses three major facets of the reform enterprise: (1) articulating the professional consensus about what constitutes the core curriculum; (2) aligning that vision with instructional materials development, accountability mechanisms, and professional development; and (3) creating authentic models of that vision through assessment and implementation strategies. It is important to characterize the current situation as realistically as possible and to come to agreement on the tactics which create the most immediate and far-reaching improvements in the system.

In this paper, we focus on the curriculum reform in mathematics and science education. This is partly due to the attention these two subject areas received at the President's Education Summit in Charlottesville and partly because of their special importance to California. California has just over 10% of the nation's population, but employs over 20% of the technological workforce. Mathematics and science education are crucial to the economic well being of our state. This paper attempts to acknowledge our current status and foreshadow those areas which warrant our discussion and action.

Introduction

The future health of California and the country depends on a well-educated population. A more sophisticated workforce is necessary to maintain economic strength. The effective exercise of democracy requires a knowledge of the civic values that bind us together as a people. Personal pleasure and enlightenment require a knowledge of cultural traditions as well as contemporary American life.

Successful reform of education requires a coherent implementation strategy in each curriculum area. This strategy must simultaneously attend to curricular goals, instructional materials, teacher preservice and inservice education, and assessment for both teacher use and public accountability. Each aspect of the reform strategy must fit with and reinforce the others, so that educators, students, and the public can see and experience the coherence and the power of the undertaking.

Central to the reform strategy is our ability to create and articulate a vision of what we want our students to learn. Defining the curriculum is, in fact, the cornerstone of the overall reform effort. Only when all parties responsible for students' learning are clear on what is to be taught--and how--can we mobilize to make the necessary improvements. It is important to recognize the philosophical and practical necessity for *all* students, not just those traditionally expected to go to college, successfully to experience the core curriculum.

The effectiveness of the vision depends on the authority that can come only from professional consensus. In each subject area, we have sought to assemble the most knowledgeable, most committed leaders of the subject area to establish curriculum standards and specification. We have consistently sought the strongest of the front line practitioners, educators who know the practical considerations as well as the conceptual possibilities in their areas of expertise. We have then asked these leading educators to describe what is most important to learn and what is most important in teaching it.

To serve as useful guides, curriculum standards must be powerful statements, with clarity and specificity that surpass the traditional kinds of educational goals. To ask only for *literacy* (historical, scientific, mathematical, as well as English), or to rely primarily on extensive lists of narrow skills, is to wind up reinforcing the status quo. Thus, the developers of standards and specifications consistently have been asked to present a point of view on knowledge and learning in the curriculum area that discriminates and distinguishes the desired curriculum from the nationally pervasive low-intensive, low-expectations curriculum.

The professional consensus in each curriculum area is presented in a framework approved by the State Board of Education. With the approval this November of a new *Science Framework*, an entire cycle of new subject matter frameworks has been developed since 1983. These frameworks have been increasingly recognized throughout the country as state of the art documents. Numerous other guides and booklets have been produced to assist teachers and others in making the necessary curricular shifts.

As is now well understood, instruction and assessment strategies must be designed and implemented in concert with curriculum content. A major misjudgment concerning instruction has been the view that methodology can be learned generically. As researched and articulated by Lee Shulman, there are particular methodologies in each subject area, related directly to the nature of the understandings and skills of the subject area. The development of ongoing mechanisms for large scale professional development in each subject area has been a key objective over the last seven years.

The passage of SB 1882 (1988) has created an infrastructure for subject matter staff development. The strongest features of the previously existing projects in literature, writing, and mathematics will be

incorporated into other subject area projects that are now getting underway. The 1980s have been the emergence of a new wave of leaders in the curricular areas; the need now is to invest heavily in the nurturing of these teacher-leaders and in the broader faculty development, with priority to site-based efforts that use directly teacher-leaders from the school or district.

In assessment, a major misjudgment has been that it did not matter much what was tested as long as the test was efficient (inexpensive) and reliable (for the purposes of discrimination). Having achievement measures in agreement with the goals of instruction has simply not been a priority. All that is changing rapidly now, with a national movement toward *authentic assessment* centered in the use of performance tasks. The California Assessment Program (CAP) has mobilized to shift away from the dominance of multiple choice testing to the examination of student work, away from test items created by psychometricians to discriminate among students to assessment tasks created by teacher-leaders to match the important qualities of powerful learning tasks. CAP will include a full range of performance tasks, from relatively short open response items to year-long portfolios. Already writing samples are included at grades 8 and 12, and open response items in mathematics became part of the grade 12 test this year.

With a coherent vision and the belief that the vision is achievable, it becomes possible to develop a coherent implementation strategy in each curriculum area. Although the principles are the same in each area, there are differences in detail. Both general principles and curriculum specific details are presented in the following discussions of mathematics and science. A common outline is used for each discussion to allow easier comparisons and generalizations.

Mathematics Education

The National Situation

Mathematics has changed and the role of mathematics has changed across jobs and disciplines. There is now a national consensus among the leaders in mathematics and mathematics education on the changes needed in instructional programs. This consensus seeks to integrate curriculum, instruction, and assessment, with the purpose of allowing every student to become productive in his/her use of mathematics. In *Curriculum and Evaluation Standards for School Mathematics*, published in 1989 by the National Council of Teachers of Mathematics, the argument is made that doing a better job in pursuing traditional goals cannot succeed. Success in mathematics requires that new programs be designed and installed.

The national promotion of mathematics education reform is growing. The Mathematical Sciences Education Board (MSEB) has declared 1990 to be *The Year of Dialog*. The National Research Council, on behalf of the MSEB, has already published *Everybody Counts*, and will publish two more documents about curricular reform in 1990. It also sponsored the development of a quality booklet and related material for school PTAs. There are intentions for further public promotion activities in 1990 (and beyond).

The MSEB, with Exxon Foundation funding, is sponsoring a California Coalition for Mathematics Education. This will involve the corporate and public policy sectors as well as mathematics education leadership in California. With an *Assembly* of 60 members, who will elect a governing board of seven, the Coalition will become the primary state instrument for promotion of reform in mathematics education, and should be a voice that the Governor as well as the Legislature will respect.

Mathematics Curriculum

A national consensus on mathematics curriculum has emerged. Probably more than in any other subject area, there is agreement among the leadership on directions for both content and

methodology. The central premise is that the development of mathematical power for *all* students is both a practical and a moral imperative. Our future workers must be prepared to cope with ambiguity, to perceive patterns, and to solve unconventional problems. Every student, therefore, must experience a high intensity, mathematically solid curriculum each year. There is no longer any legitimate place for a low-level, remedial curriculum for a larger percentage of our adolescents and high school students.

To quote from *Everybody Counts*, in the new curriculum, the focus will be on:

* *Seeking solutions, not just memorizing procedures;*

* *Exploring patterns, not just learning formula; and*

* *Formulating conjectures, not just doing exercises.*

Much of the specific applied research in cognitive science (Lauren Resnick's work in particular) in recent years has studied mathematics learning. In mathematics, especially, it is clear that students construct their understanding out of personal encounters with challenging situations, not from following and replicating procedures presented to them. Every student must be actively engaged in mathematically rich inquiry, assuming major responsibility for his or her own thinking.

The 1990 California *Mathematics Framework* is nearly completed. It will build on *Everybody Counts* and the *Standards*, continuing in the direction set by previous state frameworks. Following the national consensus on goals and underlying assumptions about students' learning, the *Framework* will set specifications for new mathematics programs, K-12. There is tremendous national interest in the new *Framework*, as California is now recognized as the state with the greatest ambitions and strongest leadership in K-12 mathematics education.

Assessment of Mathematics Achievement

For the public, administrators, and teachers alike, assessment that is used to measure school success in mathematics, most especially the assessment that is used for external accountability purposes, must be aligned with the national consensus goals for mathematics education. This requires the development and implementation of assessment that measures students' productivity, their performance on tasks that require mathematical thinking in pursuit of a result that has meaning to the student. As these tasks will have essentially the same character as instructional tasks, they will also have meaning for the teachers and, therefore, be useful for improving instruction.

The new assessment tasks will require students to make decisions on problem formulation, approach to solution, and interpretation of results. While multiple choice test items may still be used to check students' knowledge of particular concepts and skills, other forms of assessment will be necessary to assess students' generative work and their choices of problem formulation or approach. This means that performance tasks must increasingly become the basis for judging mathematical achievement required for success in the modern world.

The California Assessment Program (CAP) is leading the way nationally in the creation and implementation of new assessment in mathematics. For two years, the 12th grade test has included, on an experimental basis, an open-response item for every student, much in the character of a writing sample. This year these items will be officially included in the CAP matrix sampling of student performance. Scoring this sample of student work will require the direct participation of high school mathematics teachers. Their experience will be invaluable in preparing a large number of teachers who must be involved in the observations of students at work and in the review of students' portfolios that will become prominent parts of CAP over the next several years. As part of the overall CAP

design, the districts these teachers come from will be encouraged to take advantage of newly available local expertise and set up local scoring sites to score all the other student samples. The connection between instruction and assessment will be stressed. There are initial indications that the necessary inservice for the teachers will be recognized as contributing directly to their readiness to teach the new programs that are coming.

New Instructional Programs

Over the last 20 years, elementary mathematics has become increasingly weak and repetitive. It has stabilized as a notably low-intensity curriculum. The mathematical tasks students encounter are consistently too shallow, and, in contrast with other countries, a large portion of every year after kindergarten rehashes the very same material. By 5th grade, the textbook program spends the first ten weeks on lessons almost identical to those from the year before. Middle school curriculum consists of more review, some 9th grade vocabulary, and a once-through on a few new topics such as negative numbers and exponentials.

It has become almost axiomatic to say that *the textbook is the curriculum*. Although many teachers now make some use of supplementary materials for problem solving, the great majority continue to be bound by the structure and the intrinsic methodology of the textbook. The structure as well as the nature of individual lessons in existing basic instructional materials is inconsistent with having the students engaged in challenging mathematical investigations, and complete new programs are required at every level, K-12. New basic instructional materials are required to support the intended curriculum. Revisions of currently available textbooks will not be adequate.

For elementary schools, the state adoption of instructional materials in 1993 is a critical event. The typical district will purchase new materials for use beginning in 1994. Thus, there will be nearly four years from the adoption of the 1990 *Framework* to the expectation of teaching the new programs. The extent of change from traditional programs will seem indigestible to those who have made no preparations, who have been indifferent or skeptical about the prospects for a permanent shift. But there is time to prepare, time to make gradual changes in each school and classroom starting now.

High school mathematics curriculum is an equally serious and more visible problem. The present curriculum, most particularly *Algebra 1*, acts as a filter that scuttles the college possibilities for far too many students. A new curriculum in which most students study successfully at least two years of a core curriculum sequence is essential. A six year secondary curriculum development at the University of Chicago is nearing completion, and potentially important work has been done in Holland, England, and Australia. Of especially great importance are the two high school mathematics projects that started this year in California, one through San Francisco State University, the other through the University of California at Davis. By 1992, each of these will have developed three years of new curriculum designed expressly to meet the University of California's *A-F* requirements.

Equally important in high school mathematics is the development and implementation of *Math A* and *Math B*. These courses are being developed and implemented as replacements for the traditional *General Math*, a completely remedial course. *Math A* and *B*, in great contrast, are designed to engage the students in doing solid mathematics, and to create the possibility for many of the students to move subsequently into the college preparatory courses, a path which other 9th grade courses seal off.

Professional Development

Most existing teachers, as well as most new teachers, will require continuing professional support to teach the new mathematics programs. Teachers need time to themselves, time with their colleagues in their schools, and time outside their districts conferring with the larger state and national

community of mathematics education reformers. Substantial amounts of quality time are required. Time after school simply is not enough.

We have to remember the tremendous scope and depth of the change we are asking from teachers; *one-shot* demonstrations fall far short of what teachers need and have a right to expect. While a highly motivated and industrious teacher can pull herself or himself into a new instructional approach after one good demonstration and explanation, the more typical teacher cannot *take it from there* even after participation in a well run, intensive summer institute. Teachers who see the general direction must have support and time for planning their own teaching, for observing others teaching, for reflecting alone, and–most of all–for discussing in depth with their colleagues the issues of curriculum, instruction, and assessment that they all share in truly significant degrees.

The California Mathematics Project has become the largest and most visible teacher inservice program in mathematics education. With 16 sites, it provides intensive summer institutes for several hundred teachers annually, with some academic year support. A major increase in the academic-year activities is essential if the newly emerging teacher-leaders are to be used effectively. The site directors have been and continue to be vital members of the national as well as state consensus on mathematics education, so the state is in the enviable position of having its main staff development mechanism fully aligned with its curricular expectations.

School Site Mathematics Education Leaders

Using the experiences that teachers are having in their own school is far more powerful than having most of their staff development on *somebody else's turf*, not directly related to their own students and their own school. Program improvement and faculty development go hand-in-hand, and the teachers need to become responsible *at the school site* for their program.

Active, effective support of school faculties as they seek to install new mathematics programs will require able school-site leaders. Such leaders are now rare. It is unrealistic to expect the school principal to play this role in more than one subject area, and the mathematics leader will often not be the principal. It is also unrealistic to expect one district office mathematics specialist to play this role for even five, much less ten or 20 schools. David Marsh, in *Building Effective Middle Schools*, a report of case studies of eight middle schools embarked on major improvement efforts, notes that, "Critical to the implementation of individual program elements was the importance of the development of *lead teachers*."

While there is room for some variation in the designation and preparation of the leaders--two are greatly preferred because of the support they give each other--it is clear that they will need substantial sponsored development support, over a three- to four-year period, requiring an explicit commitment from the district/school.

There is growing experience in the development of teacher-leaders within the California Mathematics Project (CMP) and other mathematics inservice programs. We now see the necessity for each prospective teacher-leader to have gone through the CMP or other baseline inservice. Districts then need to make three- to four-year commitments to substantial released time for the prospective teacher-leaders. Their initial guidance and support will come most typically from CMP support of them as *Senior Fellows*. As the CMP sites continue their gradual shifting to concentrating on leadership development, the second wave of state leaders, those who emerged in the late 1980s, will increasingly take responsibility for summer and other institutes for several thousand teachers each year.

As the site leaders mature, they will assume increasing responsibility for their school faculty's professional development, which will be experienced as part and parcel of installing new programs,

not simply as increasing teachers' skills. The CMP will support these site leaders throughout the academic year, with all released time and financial support for the teachers provided by the district. By the mid-1990s, most schools can have the capacity for *doing it themselves* at their own sites, the only way reform can occur on a sweeping scale.

Science Education

The National Situation

Driven by the need for international competitiveness, public support for scientific and technological literacy for all students has now reached the consciousness of policymakers at the national level. At this time, science education lacks the high degree of national consensus emerging among the leadership in mathematics education. While groups including the NCTM and MSEB speak with a common language and direction, science education groups including NSTA, AAAS, and NSF have not yet articulated a joint strategy for the improvement of science learning on a national scale. The current national focus statement for science education is the AAAS *Science For All Americans* publication. Although *Science For All Americans* is well regarded, it does not have the specificity necessary to guide curriculum and instruction and establishes a vision that is beyond the ken of some readers. For science education to proceed apace, national science education leaders, as well as state and local leaders, need to articulate a national vision.

Science education has suffered, like other curriculum areas, by losing touch with the major ideas that comprise the scientific disciplines. Science education has moved away from learning the major ideas in the field to a point where students study the trees but fail to understand what the forest is. Part of the difficulty for this period of aimless (curricular) meandering arises from a lack of certainty about the current paradigms of science. In geology, we are still in the infancy of the new paradigm based on plate tectonics. Crustal evolution has only been considered theoretically sound for the last 20 to 40 years. In biology, organic evolution is clearly the dominant paradigm but still suffers from public uncertainty caused by the religious zeal of a small, vocal minority. As a result, our life science programs have no intellectual integrity because they have no paradigm to use for a backbone. In physics, with the paradigm shift to Einsteinian mechanics at the turn of the century, its sophistication and abstraction are so high that science educators, as a group, simply surrender the idea of bringing the real paradigm of physics into the K-12 arena. In order for science education to be consistent with modern science, we need to restore these paradigms to prominence.

Another aspect of science education that has only recently benefited from renewed interest and progress is our understanding of how students learn science. The recent and rapid developments in cognitive psychology have helped us to move science education from information transmission to real understanding. This new learning theory would have teachers work with students in small group situations where students benefit from the prior knowledge and understanding they bring to the classroom setting. Teachers are now learning where the major misconceptions lie in various facets of science learning. Helping students distinguish mass from weight, heat from temperature, and speed from acceleration requires more than being able to repeat definitions and, instead, requires students to develop deep conceptual understanding. Unfortunately, relatively few of the nation's science educators are up to date in this area of cognitive psychology and even fewer teachers and students benefit from this line of research. It is necessary to upgrade the level of discussion about science learning so all teachers, especially those in grades K-6, will employ these techniques regularly in their science teaching.

Science and Technology Curriculum

Several important documents have recently been released which allow people and ideas to converge around the major elements of the science education reform. Common among these documents is an

emphasis on integrating basic science education with technology education, and the implications of both science and technology on society. Also common among these documents is general agreement with the need for a strong commitment to teaching the disciplines of science through the over-arching themes which make science comprehensible on the grand scale. Most of the current literature in science education builds on the recent work of cognitive psychologists who have begun the labor-intensive task of studying how students learn science concepts and where misconceptions or naive theories arise. Finally, the rhetoric (but not the reality) of science education addresses the need of science learning for all students. Most importantly, the emergence of these ideas has created an atmosphere of healthy tension where science educators debate the important issues in an effort to operationalize these common elements for all students.

The California *Science Framework* is a solid start in bringing together the various viewpoints in the science education community. The new Framework is clearly thematic and paradigmatic in its organization of the content section. To some extent, it includes the science, technology and society perspective without diluting the credibility of the science. This is partly due to our interest in describing fewer concepts to be treated in more depth. The *Framework* also includes references to the research of the cognitive psychologists in a way that communicates to our primary audiences of teachers and instructional materials developers. The *Framework* is also specific on the intents and details for helping all students, including special needs students, understand the big ideas in science. While it might be said that the *Framework*, which embodies the collective strategies of AAAS, BSCS, NSF and others, could be used to forge the national consensus, our policy should be to share actively the style and substance of our *Framework* with other national leadership organizations. Of course, our state should lobby other facets of the educational system including instructional materials development, teacher training, and school accountability mechanisms.

Assessment of Scientific Literacy

The effectiveness of science education is rarely assessed at the local and state levels. When it is assessed, it is done rather poorly in paper-and-pencil, multiple choice formats that measure the lowest common denominator of factual recall. Some would argue that regular assessment is strategically important because it heightens the impact and priority of science as a field of study. We need to assess science regularly to keep it in the public eye as a priority, as well as measure it in a way that models the best of instruction. Several states and lighthouse districts have begun the development of new and promising forms of assessment. The most compelling argument that large scale performance assessment in science is possible is the recent performance testing of all 4th graders (over 200,000) in New York. Other forays into non-traditional assessment methods such as Joan Baron's work in Connecticut and Jerry Pine's work in Pasadena, both funded by the National Science Foundation, give us some hope that quality science assessment is on the horizon.

Keeping the CAP science assessment in the forefront by continuing the multiple choice testing at the 8th grade is a necessary but insufficient condition for the critically needed reformation of testing. The new committees for 6th and 12th grade CAP science tests, as well as those working on the Golden State Examinations for biology and chemistry, need clear direction on the parameters of quality science assessment so they can begin their work in earnest. Such direction must include an expectation to measure understanding deeply; to assess as we instruct; and to test students' abilities to think through complex issues in science and technology. Strong leadership is essential if these committees are to deliver on the promise of authentic assessment during 1990. Once the direction of appropriate measurement of science is agreed upon, setting future goals and targets will be more meaningful. Of course, teachers must also be assessed with the same dedication to measuring the depth of their understanding as opposed to the breadth of their subject matter knowledge. The Commission on Teacher Credentialing (CTC) is already in the process of developing test specifications consistent with the new ideas of the science reform.

Science Instructional Materials

Almost all science educators (and many publishers) would agree that the quality and quantity of science learning materials are deplorable. The texts are banal, the technology is pedestrian, and the hands-on kits are virtually unused. Hands-on science is on the wane as demonstrated in a longitudinal comparison of National Assessment (NAEP) data. So, it is difficult to imagine the depth of turnaround needed in the development and utilization of quality instructional materials. The NSF funded *triad* programs are the brightest hope for production of quality science instructional materials. The 11 projects range from a light dose of literacy to more avant garde technology-based programs. Although the development costs for these programs are high (with a projected investment of over $77 million for 11 K-8 programs), they are likely to acquire the return on investment if publishers develop marketing strategies to make these materials available and routinely used in classrooms around the nation.

The California *Science Framework* instructional materials criteria are consonant with national reform agendas created by AAAS *Project 2061* and the National Center for Improving Science Education. The *Framework* contains 11 criteria that boldly set standards for quality instructional materials. These criteria, when applied to the range of instructional materials, will easily separate the wheat from the chaff. In point of fact, instructional materials developers are concerned that California may adopt the 11 NSF triad programs in favor of traditional textbooks that read like foreign language dictionaries. The *Framework* criteria are broad enough to include technology and kit-based programs, the content of which must maintain both rigor and depth of treatment. Hopefully, the materials under development will take the first long step towards ensuring equity and in-depth understanding of science.

School-Based Implementation

Providing staff development to individual teachers and administrators outside the context of their school and district often results in a lack of classroom application. It is extremely difficult for teachers and administrators to take new techniques into an environment driven by the status quo. Our tradition of using *pull-out* programs for teachers should be done away with just as we phase out pull-out programs for students. Instead, we should create implementation strategies that preserve the school as the locus of control so that needed changes are seen in the light of the conditions (including human and physical resources) existing at the site. We will need the optimal mixture of leadership and teacher empowerment to achieve the types of reform we envision.

Restructuring and school-based management are processes by which significant reforms in science education can be achieved. Two models for restructuring elementary and secondary science education in California are very likely to provide the impetus for large-scale change if they are supported and sustained for a five-year period. The elementary California Science Implementation Network (CSIN) has created a two-tier system of support for elementary school change. In the first tier, science staff developers are located regionally and given professional development in the techniques of peer coaching, adult learning, and site-based implementation models. With their knowledge of high quality instructional materials and procedures for school-level change, the science staff developers work with elementary science mentors (the second tier) to install real science learning in every K-6 classroom. In the same way, the California Scope, Sequence and Coordination (SSC) project is enlisting 100 high schools to alter the traditional sequence of biology, chemistry and physics to a European model where students study all the disciplines each week. In this project, Department chairs take responsibility for the restructuring process. In both CSIN and SSC, the school site is the unit of implementation and change.

Curriculum

Professional Development

A profoundly different approach is needed in science staff development. Teacher training in science education has not changed materially since the NSF institutes of the 1960s. It's like the Woody Allen saw, "The food here is bad; yeah, and there's not much of it either." In one sense, the wholesale investment in staff development is not cost-effective because it has such little impact on the daily classroom ritual. In another sense, the total investment in human capital is an order of magnitude less than what is needed to effect the degree of change that is needed. Of course, what we really need is to develop and validate successful models of staff development and then obtain the funds to train all our teachers, administrators, aides and others.

The (SB 1882) California Science Project (CSP) has the potential to bring about some major changes in how we provide professional staff development to teachers; it will be based in large measure on our new *Science Framework* and is, therefore, thematic and interdisciplinary. The prospect of teachers sharing professional craft knowledge may bring about significant improvements in the investment in teacher education. Fortunately, the CSP suggests a collaborative approach, not unlike what is recommended for classroom learning. And the very idea of mixing staff from kindergarten through high school, with university faculty, has the power to enlighten both ends of the teaching continuum. After all, teacher education, as well as assessment, should be *in the service of instruction*. In a similar vein, the California School Leadership Academy offers hope in the professionalism of administrators to support quality school-based science programs. Although the existing science module predates the new *Framework*, it has the potential, if reworked, to begin developing the capacity of school site leaders to support the new science education.

Next Steps

The curriculum reform agenda has been well established now in each curriculum area. The main concern of the discussion group should be what strategies to recommend for developing and implementing the reform goals.

We have identified assessment measures, instructional materials, and faculty development as the levers. In the case of assessment, the use of alternatives to present commercial tests is vital. What incentives can be used to have districts shift their attention more to performance assessment? In the case of instructional materials, how can a market for new, not just revised, programs be created, given that most teachers have experience only with traditional textbook programs?

Teacher-leaders regularly working at the school site are necessary for shifting the school culture and sustaining reform. Even larger is the amount of sponsored time needed for the entire professional staff. The central issue, of course, is how to finance the faculty development. Within that, however, the discussion group also needs to consider whether contact time with students should remain the same, or if additional staff could free substantial teacher time during regular school hours.

More broadly speaking, the discussion group should consider the issue of pace of change. How slow can it be and still maintain momentum; how fast can it be pushed without burnout or revolt among the teachers and administrators?

High School Transitions

Introduction

Today, completing high school is judged to be the minimum requirement for adolescents and completing college is increasingly viewed as the functional equivalent of the high school diploma of only a few years ago. According to the Bureau of Labor Statistics, the number of jobs with higher skill requirements will continue to expand for the next 12 years. While total employment will grow by 19% by the year 2000, it is estimated that the demand for technicians and workers with related skills will expand greatly. Also, the gap between what an average college graduate and an average high school graduate earns is widening dramatically. In 1986 college graduates earned 40% more than high school graduates.

The responsibility of high schools is to assist high school students to make the transition to postsecondary life whether it be to a four-year college, community college, technical school, or to a job in the business world. It is crucial during this process that high schools work with colleges, universities, and businesses to provide clear standards and approaches to organize basic programs and coherent services for *all* students. It is particularly important that schools join with business in agreeing upon these standards for apprenticeships, hiring criteria, and criteria for advancement in jobs so that there will be clear incentives for all students to complete a rigorous high school program.

In addition, high schools must have strong approaches which help potential dropouts stay in school and approaches that draw those who have already dropped out back into school.

Transition Areas

One way to examine high school programs and philosophies is in relation to four transition areas: (1) graduates who go on to a four-year college; (2) graduates who go on to a community college; (3) graduates who go directly to work; and (4) students who drop out of high school. This in no way implies that these are or should be *tracks* into which students are channeled or isolated; in fact, all students must be encouraged to strive for their highest possible level of performance.

What the transition areas reflect are *destinations* for students--three of which are desirable and one of which is not. The challenge for schools is to mount effective programs leading to the three destinations and help students select the highest possible goals and gain the skills needed to succeed in college or at work. For each destination, strong instruction for *all* students in a sophisticated core curriculum is the focal point, but each destination should also have clear standards--specific information for students on what they must do to succeed in reaching the destination of their choice. Each destination requires schools to develop approaches based on the specific needs of the youth in that category, emphasizing the need to develop the thinking and literacy skills necessary to be productive citizens in this democracy and to meet current and future job market demands.

The Importance of Standards

In 1983, California launched an effort to develop a professional consensus on the curriculum that would be taught to all students. As a result, curriculum standards and frameworks have been developed for each of the major subject areas. The standards and frameworks form a common core of knowledge for all students and reflect the critical thinking and problem solving skills so important in all four transition areas.

We have also succeeded in getting many more students to take harder courses. Since the passage of SB 813 in 1983 all students must complete at least three years of English, two years of mathematics, two years of science, three years of social science, one year of fine arts or foreign language, and one semester of economics. As a result, since 1983, 40,000 more seniors each have

taken a third year of science, a third year of mathematics and a fourth year of English. In addition, 80% more students are taking physics than in 1983-84, 64% more students are taking chemistry, and 43% more students are taking advanced mathematics. The increases are particularly dramatic in lower socioeconomic areas. Grade 12 mathematics scores on the CAP have improved by 1.1 grade levels since 1983 as well as a one-half grade improvement in reading during the same time period.

The present issue is how can we sustain this progress by continuing to redesign courses to make core content more accessible to *all* students. With the agreement on the core curriculum to be taught, it is crucial that schools focus on setting clear performance standards for students whether they are college bound or plan to transition directly to work.

With these standards, schools should be able to:

* avoid student tracking plans that deny any student access to a fully balanced program of general education and electives;

* establish criteria to help students understand the skills and level of effort needed to prepare for success in work or community college as well as for a four-year college;

* organize more powerful support programs to help students aim as high as possible and expand their choices for their destination after school (e.g., work, community college or four-year college);

* diagnose, early on, students having problems and develop approaches to assist them;

* provide clear incentives and goals for which students can strive whether they are college bound or plan to transition directly to work; and

* establish strong partnerships with businesses based on clear definitions of what skills are needed by students when they leave school.

With standards in place the organization of the school should be such that the climate is one that creates a *can-do* atmosphere with a rigorous curriculum for *all* students. Partnerships with businesses, colleges and universities should be commonplace and programs developed in conjunction with the school should be accessible to *all* students. A built-in incentive system which would give hiring preferences, training opportunities, and higher wages based on an agreed upon set of criteria would ensure a higher level of competence from our graduates. Incentives for successful schools should be provided and they should be encouraged to become training institutions for other schools that need assistance.

Finally, the nature and value of the present high school diploma must also be explored. Recognizing and rewarding learning effort and achievement appear to be the key motivator for students. The diploma could be made more meaningful to employers by including data such as attendance, courses taken, performance in skill areas, and where appropriate certified occupational competencies. Employers can also start demanding high school transcripts and give academic achievement much greater weight when hiring, as is done in other countries such as Japan.

Detailed Discussion of Transition Areas

Keeping the importance of standards in mind, the four transition areas mentioned earlier are discussed in greater detail below.

Transition to Four-Year University or College

Present data indicate that about 14% of students entering high school eventually enroll at four-year institutions of higher learning and approximately half of those will eventually receive a bachelor's degree after five years of college. Our goal is to increase the number of students who enroll in colleges and universities and who receive a bachelor's degree to at least 25% of those students who initially enter high school. With this ambitious goal, strategies must be adopted by high schools that ensure *all* students have the opportunity to go on to institutions of higher learning. A number of strategies have already emerged as schools and districts strive towards this important goal. They are:

* *Systematically and deliberately treat all students as if they are college bound.* Through counseling, course enrollments and support services, ensure that *all* students have the opportunity to complete the college preparation course sequence. Embedded in this strategy is equal access for *all* students to the core curriculum. Processes have to be in place so parents and students realize options and begin planning early on with counselors and/or advisors about those options. A systematic planning process is used to make college preparation for all groups of students a priority. *UCO* and *APPI*[4] programs are examples of this type of approach. Strategies such as those used in these programs also link a rigorous academic curriculum and basic support services to students.

* *Redesign courses to deliver a rich, sophisticated curriculum to the average or below-average student. Math A*[5] is an example of this strategy. The key here is to change the delivery of courses to meet the diverse needs of more students while not reducing standards. Since California students come from such different backgrounds, schools must accommodate learners from various cultures with materials and teaching strategies that deliver each curriculum in new ways. A rigorous curriculum that challenges *all* students to think creatively, problem solve and compete with students from other states and countries must be the cornerstone of this strategy. A new curriculum like *Math A* allows more students to enter college preparatory course sequences since it prepares students for algebra through more active learning. College preparatory specialized programs should be integrated in the regular academic programs and not be viewed as *add-ons*. Addressing remediation without removing

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[4] *APPI* (Assessment, Planning, Programming and Intervention Program) was developed in 1973 on a pilot basis in Evanston, Illinois to increase the pool of under-represented minorities in advanced placement courses. The program was instituted in 1987 in Centinela Valley Union High School District with the intent of increasing the pool of under-represented minority group members in UC/CSU approved courses. Program participants are provided with in-depth and on-going guidance, challenging coursework, and interventions designed to prepare students for college admission upon graduation. In addition, a homeroom advisement period is required for ninth grade participants. Parental involvement is also an integral part of the program.

[5] *Math A* is an innovative new course that involves active learning of mathematical concepts which will prepare students for *Algebra 1* or continue in an integrated sequence of *Math B* and *Math C*. The course includes solving real life problems which emphasize exploring, investigating, reasoning, and communicating rather than arithmetic algorithms in order that students will be ready and able to make mathematically informed decisions in relation to their jobs, their government, and their lives. Among the goals of *Math A* is to use concrete models and visual representations to provide the student with a firm basis for sound mathematical ideas while transitioning from the concrete to the abstract. This course allows more students to enroll in the traditional college mathematics sequence or to be better prepared for community college work.

students from college preparatory classes is a strategy that successful high school programs have used.

* *Identify a group of underachieving or average students as a special group targeted for college preparation.* The strategy here has been to take a group of students who would not likely aspire to or succeed in preparing themselves for college, given the regular school setting, and give them some special importance, build a sense of camaraderie and provide them with special support and assistance from a team of teachers. In order to be a part of the special group students and often their parents are required to make a formal commitment to succeeding in the program and achieving their end goal. Students are put in appropriate advanced classes and receive individual help through counseling, tutoring, or other means. The students involved become part of a unique cohesive group striving toward a specific goal, and this helps build a strong emotional connection between their peers and the school. Programs that have used this strategy to identify target-groups and establish quantitative goals for students going on to a four-year college are *AVID*[6], *Project 2000*[7], and the others previously mentioned.

Strategies such as these often involve developing collaborative programs with higher education institutions and/or business groups. Instead of working in isolation, schools work in partnerships with other agencies to increase the number of students who will enroll in college, especially low-income and minority students.

Transition to Community College

Currently, about 35% of students entering high school eventually enroll in community colleges, but only about 10% of those entering high school earn an associate degree. Our goal is to increase the number of students who enroll in community colleges and who receive an associate degree to at least 25% of those students who initially enter high school. Two effective strategies to help achieve this goal are emerging. They are:

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[6] *AVID* (Advancement Via Individual Determination) programs began in San Diego County, and includes 35 high schools and five middle schools, the University of California, the California State University, community colleges, and the State Department of Education, as well as parents, community, and business groups. It is a language arts-based program that uses writing as a learning tool in all subjects to prepare ethnic and low-income students for four-year-college eligibility. *AVID* consists of regularly scheduled elective classes in grades nine through twelve which focus on skills students will need to qualify for and succeed in college (e.g., study skills and note taking). All participating student are placed in advanced-level courses. Instruction consists of college preparatory curriculum written and taught collaboratively by high school and college instructors. Other components are groups led by tutors from local colleges and field trips to colleges or places of cultural interest.

[7] *Project 2000*, a joint school district/business partnership in Bakersfield, is ultimately designed to upgrade the expectations and performance of the average student as they transition from 6th to 7th grade, 8th to 9th grade, and 12th grade to college OR 12th grade to the working world. It provides additional support of about $400 to the average student through small class size, state-of-the-art technology, one-to-one counseling, self-esteem building activities, tutoring assistance; time for intensive interactions among teachers, the latest in teaching techniques; and parent involvement. The initial target population consists of 400 9th grade students who are members of groups that are under-represented in institutions of higher learning and who have potential for success in college but whose present achievement in academic subjects is inadequate.

* *High schools and community colleges work together to define the standards students must meet to succeed in community college and also for them to be able to transfer to a four-year institution.* Presently, many of the community college students do not see the connection between the two-year college and the four-year college. Strategies developed by both post-secondary institutions and the high school must strive to increase the rates of transfer to the four-year institutions, but must also increase the numbers of students achieving associate degrees which qualify them for employment in technical fields. A recent review of the Master Plan for Higher Education culminated in a major reform (AB 1725) which, among other elements, emphasized matriculation programs leading to the associate degree. These programs have increased efforts by community colleges to assist and advise high school students through admissions, assessment, guidance and orientation activities. High schools must continue to work closely with the community college system to set standards for students entering matriculation programs from high schools and standards for students transferring from community colleges to CSU or UC. These standards should be clear to all high school personnel and their students.

* *High school Career-Vocational programs, Regional Occupational Programs/Centers (ROP/C), community colleges and private businesses work collaboratively to set clear standards and incentives for successfully completing high school and community college courses preparing students for particular jobs.* The *T-TEN*[8] program is an example of a partnership between an automobile manufacturing business and education to provide technically and academically able high school students with advanced technical programs at the college level. The T-TEN program operates at 15 locations throughout the country. Partnerships such as this need to be expanded in additional technical areas. The *2+2*[9] programs which are generally known as

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[8] *T-TEN* (Toyota Technological Education Network) is a joint partnership program among Toyota Motors, a community college, and feeder high schools to provide technically and academically able high school students with advanced technical programs at the college level. The program was launched nationwide, about two years ago at 15 community colleges to adequately train aspiring auto mechanics for an increasingly high-tech field.

El Camino Community College and Centinela Valley Union School District have been involved in the program for some time. Ventura Community College along with Ventura Unified School District and Santa Paula Union High School District have recently joined the nationwide network. High school *T-TEN* students attend classes at the community college in the afternoon as a supplement to their regular academic school program earning concurrent credit at both educational institutions. Once participants complete high school, they will continue auto technician training, including Toyota-specific courses and will be placed in paid internship with Toyota. In addition, students will be given an opportunity to complete an associate degree. Upon completion of their degree, they will be offered preferential consideration as permanent employees of Toyota dealerships. Toyota also offers full scholarships to qualified students, including a collection of tools valued at $3,500 after completion of the program.

[9] There are 21 funded *2+2* programs which have been successful throughout the state and which are in varying phases of development. The differing models have focused on career-vocational education usually generated by local need, community accessibility, and job market demands. *Phase 1 (Planning)*: Thirteen projects are designed to develop a model for articulating vocational education programs, including processes for linkage among community colleges, high schools, regional occupation programs, and adult schools; identification of needs; potential programs/courses to be articulated, agreements and procedures and job market potential. Example: Foothill-DeAnza Community College District, Fremont Union High

articulation programs, coordinate the last two years of high school and ROP/C with two years of community college work in sequentially developed courses in a particular content area. Each participating institution signs an agreement which describes the responsibilities of the parties involved.

Transition to Work

Students must be equipped to move from school to work with skills that are far more than minimal. Our goal is to have 40% of the students who enter high school make the transition to work with skills that will enable them to succeed in the workforce. These students will need increasingly sophisticated reading, writing, computing, thinking and problem-solving skills in order to perform in more technical jobs.

Currently, there are no clear performance standards and rewards for students who are making the transition directly from high school to work. As a result, students often have little or no incentive to work hard because they can attain a high school diploma with a minimum amount of effort. The business community is beginning to demand tougher standards for students entering the work force directly out of high school. But our young people are not currently aware of these standards until they try to get a job and many times, by then, it is too late. They have merely focused on graduating, not on doing well along the way.

Educators should seize the opportunity to join with the business community to agree on performance standards for entry into jobs and make sure students are aware of those standards. Like students preparing for higher education, students preparing for employment must receive a rigorous core curriculum. In addition, the agreed upon conditions and standards for transition to work must be built into high school programs early on. As in other countries, employers could reward students with good high school grades by giving hiring preferences, training opportunities, and higher wages. Two strategies to consider are:

* *Schools join with businesses to set clear standards for students to meet if they are to succeed in employment.* The agreed upon standards and incentives must be communicated to students in a formal manner. A good example of how standards and incentives can be used is now being proposed by the business community. Several businesses want to establish a national computerized data bank that would include information--academic, occupational and personal (attendance, tardies) and test results--about students. Although the tests would be voluntary, businesses hope students would be motivated to take them because of the prospect of obtaining better and higher-paying jobs from companies that subscribe to

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School District, and North County Regional Occupation Program includes business/secretarial and information/word processing. *Phase 2 (Implementation)*: Seven projects designed to make existing articulation models fully operational, including warranted revision and refinements. Example: Cerritos Community College District; ABC, Bellflower, and Norwalk-LaMirada Unified School Districts; Southeast L.A. County Regional Occupation Programs; and California State University, Los Angeles includes automotive, drafting and design, electronics, manufacturing. *Phase 3 (Institutionalization)*: One project designed to expand an existing articulation model which has been partially or fully implemented to a smoothly institutionalized process by all participating local education agencies. Los Rios Community College District; Elk Grove Unified, Folsom-Cordora Unified, San Juan Unified, and Grant Joint Union High School Districts; Adult Education Schools; Sacramento County Regional Occupation Program; and California State University, Sacramento includes computer science, electronics, mechanics, and office administration.

the system. This effort reflects the growing national support for setting standards and creating meaningful incentives for students moving directly from high school into the work force.

* *Make available to students a sequence of vocational education courses that has a strong core curriculum base.* This integration of a strong academic core into the practical hands-on approach of career-vocational education can give students the more sophisticated skills that so many businesses want in their employees. These sequences must be built upon the core curriculum so that all students benefit from critical-thinking skills that can apply to real life situations. Currently, Model Curriculum Standards and Program Frameworks in Vocational Education have been developed and will soon be ready for implementation in targeted areas. A good example of programs where schools and businesses have collaborated to give students a strong background in work skills, academic skills and work are the *California Partnership Academies*[10]. Another promising program is *Jobs for American Graduates*[11].

At-Risk Students

Although the number of dropouts in California seems to be holding steady or even dropping a bit statewide, the dropout rate must still be substantially reduced if our economy is to continue to be strong. The goal here is to reduce the number of entering high school students who drop out from 22.7% to under 10%. This goal is very ambitious and will require concerted efforts on the part of parents, teachers, other school personnel and members of the community. Early identification of the potential dropout is crucial. Much research has been done on the kinds of characteristics that identify potential dropouts. The most predicable indicator is the student who is over age for his/her particular grade. Other indicators are lack of interest, boredom, working full time, substance abuse, pregnancy or having a child, and a lack of interest in school and school functions. Once these potential

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[10] *California Partnership Academies* are youth training, school/business partnerships directly geared to job market opportunities in their geographic area. They are designed to encourage youth who present a high risk of dropping out of school to remain in school. The concept has been implemented successfully in the fields of agriculture, building trades, business, computers and other electronic technologies, and health. Public funds are matched by the business community ensuring that training will occur to give students a marketable skill when they graduate. The basic program involves technical preparation starting with tenth grade high-risk students who are programmed for three years in a *school-within-a-school* basis for four periods daily, including mathematics, English, history/social science, and a laboratory period related to the selected occupation. Students selected have reasonable potential, but shortcomings as seen in patterns of spotty attendance, poor grades, and lower-than-average earned credits.

Sequoia Union High School District implemented the first such academy (formerly known as *Peninsula Academy*) in the early 1980s. Since then a comprehensive evaluation of the Sequoia experience and 20 new programs in other school districts provide convincing evidence that the program works for high-risk youth. Statewide, approximately 900 students are involved in programs.

[11] *Jobs for American Graduates* (JAG) is a school-to-work transition program encompassing the following three objectives: (1) reduce the dropout rate; (2) improve the graduation rate; and (3) provide for sustained employment in a quality job. The program consists of instruction in 33 employment abilities, job development, and placement assistance provided by a professional cadre of *job specialists*, and follow-up support provided during the first nine months of employment following high school graduation. Centinela Valley Union High School District's JAG program enrolls 370 students, who are being served by eight *job specialists*.

dropouts have been identified, adequate and appropriate assistance must be given. Conditions which help these students to function better are a close relationship with an adult, small classes, considerable individual attention and a meaningful core curriculum.

As schools and districts work to reduce the dropout rate and address the needs of students at risk, two types of strategies are considered key. They are:

* *Schoolwide strategies which track the progress of individual students, detect when they are having problems, and organize support and assistance for them.* In these schoolwide strategies, support and assistance from teachers, counselors, other school staff and the community are provided based on early warning signs as well as in response to the more typical prominent signs of problems. The entire school community must take responsibility for not letting students slip through the cracks.

  In a number of programs, schools work collaboratively with community agencies or private business to assist students at risk. Examples of such programs are the previously-mentioned *California Partnership Academies*, as well as the *Motivation and Maintenance*[12] and the *Pregnant Minors*[13] programs.

  Another schoolwide strategy which has been successful in many schools is the use of an advisement program. Counselors' roles are re-defined and every professional staff member at the school takes responsibility for advising a specific number of students. This type of advisor-advisee program results in smaller student-adult ratios for counseling and makes tracking an individual student's progress and identifying his or her potential needs much more feasible.

  There are a number of other interventions used for addressing the needs of students at risk, but the most successful ones fit into a schoolwide strategy.

* *Strategies which tailor the curriculum and instruction to the needs of students at risk.* A variety of instructional strategies are employed. Successful programs employ non-traditional approaches to teach academic skills, critical thinking and problem solving. Included in the approaches should be a variety of meaningful real-world experiences. Examples of programs

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[12] *Motivation and Maintenance* (SB 65) grants provide schools greater flexibility in the use of existing state categorical funds in order to design programs to meet the needs of at-risk youth. Each school funded hires an outreach consultant who is able to act as an advocate for at-risk youth. SB 65 also supports Alternative Education Work Centers, whose purpose is to provide education and vocational services for youth who had previously dropped out of school.

Educational clinics are permitted to fund private agencies to provide diagnostic and intensive individualized instruction to youth who have dropped out of school and prepare them for re-entry into another education program.

[13] *Pregnant Minor Programs* are directed to help pregnant students stay in school, adapt to parenthood, and plan for the future.

reflecting these strategies are the *Specialized Secondary Programs* and the *Education for Excellence Through Vocational Preparation*[14] programs.

Schoolwide Issues

In addition to developing standards and strategies specific to the needs of students in each of the four transition areas, it is crucial to strengthen the school's overall capacity for improvement. The strategies involved in strengthening this capacity are characterized below.

Management and Organizational Strategies

These strategies involve districtwide or schoolwide management and organizational issues. Key strategies are:

* Planning for overall school improvement. Schools are encouraged and supported in thinking through planning and implementing improvement efforts focused on delivering a rich curriculum to *all* students and reflective of the specific needs of their school;

* Seeking *targets of opportunity* which bolster a school's planning and improvement efforts, taking advantage of new resources such as School Improvement Program or SB 1882 (Staff Development) monies from the state or resources redirected from within existing budgets;

* Maintaining a strong system for monitoring the progress of all students and developing procedures to improve the quality of key data collection elements for dropouts and employment placement; and

* Building a strong school spirit and emotional connections between students and the school or their program within the school.

Curricular, Instructional, and Staff Development Strategies

These strategies involve redesigning the curriculum and the instructional approaches used to deliver that curriculum, and providing the necessary training and support to staff. A number of key strategies are:

* Working with departments to redesign curriculum and instructional approaches. This includes providing adequate time and support to staff. Time must be structured into the school day and year for faculties to engage in training and to explore innovative approaches such as restructured class schedules, interdisciplinary teaching blocks, advisor-advisee programs, and effective uses of technology.

* Ensuring that categorical programs work effectively with the core program and with one another. The idea here is to have the special programs support the base program rather than simply serve as an add-on or as a *competing curriculum*.

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[14] *Education for Excellence Through Vocational Preparation* is a project begun in 1985-86 in eight comprehensive high schools in California. The goal of the program is to develop high quality services for disadvantaged students in career-vocational preparation programs by including the development of comprehensive guidance plans; joint planning between guidance personnel, academic and vocational teachers; curriculum review; increased active participation of the business and industry community; effective staff development for school site personnel and the updating of educational programs.

* Integrating academic and career-vocational programs.

Community Strategies

The focus here is on building community support and bolstering parental and community involvement particularly within minority communities. The primary strategies that are used here are:

* Informing the community of student progress, overall improvement, goals and strategies, and areas in which they can help; and

* Engaging the community through collaborative efforts and joint projects (e.g., parent education and involvement programs, community service programs, school/business partnerships, agreeing on employment standards, and providing support and incentives for succeeding in programs).

State and District Strategies

These focus on shifting from a *rule-based* system to a *performance-based* system. Key strategies include:

* Setting clear standards which describe both academic and employment readiness;

* Agreeing on how to measure performance and on performance goals; and

* Providing districts and schools the flexibility they need to achieve those goals;

* Offering high quality technical assistance, support, and staff development;

* Holding districts and schools accountable for results and reducing reliance on procedural compliance activities.

Adult Literacy

Introduction

Adult literacy was identified as an integral part of the emerging agenda for educational reform at the National Education Summit. To assist the adult literacy focus group, information is provided concerning the scope of the adult literacy problem in California and the steps which have been taken to combat it. The group's mission is to:

* Highlight and validate California's efforts in adult literacy;

* Describe future needs and directions; and

* Make suggestions and recommendations on California products and services that can be shared with the nation.

This summary report serves to acquaint the summit participant with the need for literacy services in California and presents focus questions to guide the discussion of the information that follows.

Defining and Measuring Literacy

We strive for a fully literate society. But what is it that we are seeking? Literacy is elusive: in definition, in measurement, and in attainment. "The attempt to define literacy is like a walk to the horizon: as one walks toward it, it continuously recedes. Similarly, as groups of people achieve the skills formerly defined as literacy, altered circumstances often render definitions obsolete. New definitions replace the old ones as new goals are set. People considered literate by a previous yardstick are now regarded as illiterate."[15]

Technology is changing so rapidly that what was a good definition of literacy yesterday is not necessarily good for today, and may be entirely invalid tomorrow. The standard of literacy a hundred years ago was the ability to sign one's name. During the World War II era, some 50 years ago, the armed forces defined literacy as a 4th grade education. Twenty-five years ago, based on the standard of the War on Poverty, an 8th grade education was the acceptable literacy standard.[16]

The concept of functional literacy was introduced in 1956 when William S. Gray stated, "A person is functionally literate when he has acquired the knowledge and skills in reading and writing which enable him to engage effectively in all those activities in which literacy is normally assumed in his cultural group." This concept is reflected in the National Assessment of Educational Progress (NAEP) study which defines literacy as "...using printed and written information to function in society, to achieve one's goals, and to develop one's knowledge and potential. Inherent in this definition are two important distinctions. The first is that the definition rejects an arbitrary standard such as signing one's name, completing five years of school, or scoring at the 8th grade level on a test of reading achievement. Second,...it implies a set of complex information-processing skills that go beyond decoding and comprehending textual materials."[17]

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[15] David Harmon, *Literacy: A National Dilemma*, Cambridge, New Yourk, 1987, page 3.

[16] National Assessments of Educational Progress, *Literacy: Profiles of America's Young Adults* with Foreword by Thomas G. Sticht, Educational Testing Service, Princeton, New Jersey, 1986, page v.

[17] Ibid, page 3.

Just as there are varying definitions of literacy, there are varying standards and measures in use today. The NAEP study uses three different scales: quantitative, document, and prose, with a mean of 305 and a standard deviation of 50, within a range of 0-500. The General Educational Development (GED) tests, the nation's most widely recognized high school equivalency examination uses a standard score of 45 as a passing mark. It is normed so that half of the nation's high school seniors achieve that score.

In California, the elusive nature of acceptable literacy standards was recognized in 1976 when the Hart bill gave local districts the responsibility to set their own guidelines for meeting required proficiency standards for graduation (*Education Code* Sections 51215-51217).

Prior to the 1980s, tests such as the Wide Range Achievement Tests, Test of Adult Basic Education, and Adult Basic Learning Examination were used in some of California adult literacy programs. All of these tests yielded grade level scores. Now assessment instruments developed by the Comprehensive Adult Student Assessment System (CASAS) are most commonly used in California's literacy programs, including adult schools, community colleges, and other local agencies receiving federal funds, as well as the Greater Avenues for Independence (GAIN) and Immigration Reform and Control Act (IRCA) programs. CASAS assessment instruments concentrate on the life and work skills associated with functional literacy.

Although adult educators do not consider grade equivalents, which are normed on children, appropriate for use with adults, they are widely used by other agencies and understood by the general public. Thus, two benchmarks have evolved from the requirements of GAIN and IRCA. Students functioning below a CASAS score of 215 have not mastered the basic skills ordinarily included in the first six years of school. A student functioning below this level will have difficulty reading basic directional signs, filling out applications and other types of forms, and following simple written directions. A score of 225 indicates the student has the basic skills necessary to prepare for the GED. "To prepare..." means the student has the reading ability, but not necessarily the substantive knowledge, to pass the tests.

CASAS test scores for the past eight years show an average gain of 5-7 points for each 100 hours of instruction.

The Need for Literacy Services in California Today: Scope of the Problem

An overview of educational attainment suggests the scope of basic educational deficiencies. In 1987, some 21.1% of the total state population over age 25 had not completed high school, and 11.9% had completed no more than an 8th grade education. In absolute numbers, this translates to 3.5 million adults without a high school diploma and 2.0 million with no more than eight years of schooling.

Using data collected in the 1979 NOMOS[18] study, SRA Associates re-projected the size of the California population in need of literacy services. This re-estimate of need incorporates updated census data which reflect differentiated rates of population growth in the state since 1979.

Of the 20,335,424 individuals aged 15 and over in California, SRA Associates estimated in 1987 that 3,075,312 may be considered to have a significant *performance deficit* as defined by the NOMOS competency measures. This number represents approximately 15.1% of the adult population, a figure

[18] NOMOS Institute, California Competency Survey, Berkeley, 1979.

which is slightly higher than the 14% estimated by Barnes and Henschel[19] for the U.S. Office of Education. Those estimates were based on data available before the major influx of refugees occurred in California and before the military services ceased serving as a *literacy service provider of last resort* to several key at-risk populations. Thus, illiterate adults currently represent a population which is three-quarters the size of the K-12 population.

> The highest rates of illiteracy are found among minorities. However, 43.2 percent of literates in California are white.

The highest rates of illiteracy are found among minorities. However, the greatest numbers of illiterates are white. The NOMOS methodology, as updated by SRA, indicates that 28.2% of Asians, 26.5% of blacks, 23.9% of Hispanics, and 9.8% of whites have *performance deficits*. Despite the higher rates of illiteracy among minorities, the largest single group of illiterates is white. The 9.8% of whites who have performance deficits translate into 1.3 million illiterates. Thus, 43.2% of the 3.1 million illiterates are white. When they are combined with the 12.8% of illiterates who are black, we see that the majority (56%) of illiterates in California are native speakers of English.

In broad brush strokes, there are two major causes of basic educational deficiency. First, children and youth may, for a variety of reasons, drop out of school or fail to learn while in school. Large portions of these *youth-at-risk* ultimately become *adults-at-risk* with basic educational deficiencies. Second, immigrant adults and their children frequently do not have formal educations from their native countries, and when they have, they may still have language handicaps resulting from problems with learning English.

Literacy and the Workplace

Pushed by international competition and fueled by technological innovation, California is leading the nation into a post-industrial era of *high-tech* industries and a staggering diversity of services. This change is not occurring overnight, but it is relentless. Just as the archetype work setting has already moved from the work bench and factory floor to the office desk and telephone, tomorrow's work setting will become the micro computer with a *desktop* screen and service desks supported by international information technology.[20] Today's workers must better prepare themselves to be productive in tomorrow's economy, and adult education will be a critical component in that task.

California's changing occupational profile promises to increase the basic skill requirements of most new jobs, and new technologies promise to alter the skills required within long-established occupations.

A recent national study conducted by the Hudson Institute for the U.S. Department of Labor found that the basic skills required for the growth occupations of the future will require significantly higher levels of basic education. The median years of education required for employment in 2000 will be

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[19] Barnes, R. and Henschel, G., *Adult Illiteracy Estimates for the States*, United States Office of Education, 1986.

[20] Fred Best, "Preparing California's Workforce for the Jobs of the Future", in Howard Didsbury (Editor), *The World of Work Careers and the Future*, World Future Society, Washington, D.C., 1983.

13.5 compared to 12.8 in 1984.[21] Specifically, some 40% of employment in 1984 was found in lower skilled occupations, and only 27% of the jobs of the year 2000 will be in lower skilled occupations. Conversely, 41% of the jobs in 2000 will be in higher skilled occupations compared to 24% in 1984.

The combination of the impact of immigration, the high school dropout rate, and the changing needs of the workforce will keep the need for adult literacy programs on the educational agenda for the foreseeable future.

Current Literacy Programs

What is California doing to meet the literacy needs of its population? The state has long sponsored the largest literacy programs in the nation and will continue to commit significant resources to improve this effort.

California's literacy delivery system consists of:

* Adult Schools
* Community Colleges
* State Library Programs
* Volunteer Organizations
* Community Based Organizations
* Employer Provided Education

In the public sector, the adult schools serve about 75% of the state's approximately 900,000 basic skill students, followed by the community colleges' non-credit divisions with 21%. The balance are served by the primarily one-on-one tutoring services available through libraries and volunteer groups.

The adult schools and community colleges have operated under both growth and funding limitations since 1978. Indeed, there is no provision for start-up of new programs or increasing capacity to accommodate California's growing and geographically shifting population. English as a Second Language (ESL), along with the various elementary and secondary level basic skills courses, dominates the course offerings within the ten authorized areas of instruction for which they receive public funding. State funding for these programs represents approximately 2% of total spending on education.

Supplemental funds from the Immigration Reform and Control Act and Greater Avenues for Independence have augmented these systems for the past couple of years.

The Federal Adult Education Act provides an additional augmentation to state funding. About 80% of the federal funds go to local agencies, including community based organizations. The local grants are small, amounting to only $45 per ADA in 1988-89.

California's state plan for the federal money limits local grants to elementary level programs. This is primarily a financial decision, reconfirmed by the Superintendent's 1988-89 Adult Education Advisory Committee, to target the money to those *most in need*. That decision does not in any way negate the more refined literacy needs of the secondary level adult student.

Remaining federal funds are used for special developmental, staff training, and innovative planning and demonstration projects. It is with the careful focusing of these funds that the Department of

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[21] William Johnston and Arnold Packer, *Workforce 2000: Work and Workers for the 21st Century*, Hudson Institute, Indianapolis, 1987, pages 96-101.

Education sets policy for its adult programs receiving federal funds. Under the guidance of past state plans, competency based adult education, with an emphasis on the life skills associated with functional literacy, is now incorporated into adult basic education programs (including ESL) throughout the state.

Adult Education 2000 Project

Utilizing these federal funds, the current state initiative, *Adult Education 2000 Project*, is being guided by *Adult Education in the 21st Century: Strategic Plan to Meet California's Long Term Adult Education Needs*, completed under the guidance of the 1988-89 Adult Education Advisory Committee. The plan seeks to give adults easy access to adult education programs that match individual and business needs by providing learners with an overview of all educational opportunities in the community and then to facilitate their movement to programs that meet their needs. The recommendations include:

Improve Access to Users

* Funding to Meet Today's Needs
* Funding for Innovation and Performance
* Community Adult Education Information Services
* EduCard (Adult Education Access Card)
* Linkage of Support Services to Increase Access

Improve Accountability

* Procedures for Adjusting Instructional Priorities
* Quality Standards and Performance Measures
* Integrated Adult Education Data System

Improve Quality and Responsiveness

* Program and Staff Development Support
* Teacher Certification Appropriate to Adult Education
* Facilities for the Future
* Special Grants to Test Program Innovations

Improve Planning and Coordination

* Collaborative Planning and Governance
* Adult Education Institute for Research and Planning

The plan does not propose a new bureaucracy to govern and coordinate programs; rather, it encourages the use of information technology to assist learners and educators to move effectively among the many existing resources.

The Chancellor's Office of the California Community College has joined the Department of Education in an ongoing joint effort to collaborate in the implementation and adjustment of the Strategic Plan.

Other components of the Adult Education 2000 Project include:

* The Adult Education Institute for Research and Planning, which has the development of implementation plans for the strategic plan as its initial task.

* The Outreach and Technical Assistance Network, which coordinates regional staff development activities and assists local agencies in the use of emerging technologies in the classroom.

* The Comprehensive Adult Student Assessment System (CASAS), which coordinates the development of various assessment instruments and supporting materials, including the pre-post tests used in the federal program.

* The ESL Teacher Institute and the soon to be added ABE Teacher Institute, which provide intensive staff training to the large numbers of new instructors entering the adult system each year.

All are working together in the challenge of meeting the literacy needs of the California population.

These projects and overall direction of the Strategic Plan have been developed or validated through the collaboration of representative stakeholders in adult learning. It is a living plan which will be continually adjusted as we confront the issues of literacy and the broader adult education programs in the state.

Issues for Discussion

The following questions are offered as a springboard for discussion on adult literacy at the California Education Summit.

Definition, Goals, Standards, and Measurements

* What should be the standards and goals of literacy efforts in California?

* How do we define and measure literacy?

* Do these standards match the needs of employers?

* How can we improve existing programs?

* What can be done to promote program quality in the areas of learner achievement, instruction, staff development, and technology?

* How can we measure success?

Barriers to Access

* What groups need more access to adult literacy programs?

* How can we increase access?

* What are the significant barriers to access? How might they be reduced or eliminated?

Actions to Meet Literacy Goals

* What has the state accomplished in the area of adult literacy? Can those accomplishments keep pace with the changing demographics of California?

Adult Literacy

* How can we encourage public agencies, volunteer groups, and employers to collaborate in planning and implementing literacy programs? What contributions can each make to the joint efforts?

* What can be done about the limited growth and funding of literacy programs?

* What action needs to be taken when IRCA funding stops?

* What additional directions, suggestions, and recommendations can be offered other than those included in the Strategic Plan and the Federal Four-Year Plan?

Success Measures

* Based on the group's recommendations, what other measures of success are there that are having a positive impact on adult literacy?

* What can we say to the nation based on our knowledge, experience, and thinking?

This summary report provides limited information on these topics. It is hoped, however, that it will stimulate discussion and suggestions for improving our programs in the future.

Organizing More Effective Services for Children, Youth, and Families At Risk

Introduction

There is a growing consensus that schools, families, communities and the private sector must become stronger partners in helping all of our children, and particularly children at risk, to reach their full potential. This partnership is particularly important in enabling these young people to succeed in school, in higher education, and in the job market. While there are many ways that schools can organize themselves to serve youth at risk better; the schools cannot do it alone. As many recent reports and studies have concluded, there is a critical need for better coordination of health, education, social services, mental health, juvenile justice, and youth employment services. In addition, there is a need for substantial investments in early intervention and prevention, as well as a reorientation of existing services.

The discussion of these issues will have three goals: first, to examine ways in which services can be designed or reoriented to emphasize prevention; second, to identify ways in which schools can work with other local agencies to coordinate resources and to serve children and youth at risk more effectively; and third, to suggest steps which schools can take to better coordinate their own programs and improve their focus on prevention and early intervention. In addition, we want to identify specific barriers which stand in the way of reaching each of these goals. And finally, we hope that the results of these discussions will contribute to improvements in state and local policies, as well as recommending ways in which the federal government can assist California in meeting the needs of childen and families at risk.

Background

Recent analyses, such as *Conditions of Children in California* (PACE Report) and *Crossing the Schoolhouse Border* (California Tomorrow Report), document the effects of changing demographics on education and the increasing numbers of families at risk. Earlier this year, the California Coalition for Children presented its initiative to promote the development of coordinated mechanisms for child and family services. The Coalition's problem statement notes that these services are too often provided in a fragmented, duplicative, and reactive manner. Scarce resources are focused on problem behaviors and acute intervention services, rather than on prevention.

Additionally, California's current planning, funding, and service delivery structures tend to focus on specific categories of problems with specific eligibility criteria, despite the fact that these categories of problems interact, reinforce one another, and often cluster together in the same individuals, families and neighborhoods. Public services tend to isolate these categories and to design programmatic strategies around the categories, rather than designing strategies around the client through a collaborative approach to providing services.

The California Coalition for Children's Problem Statement also highlights the following specific areas:

* *Population.* An estimated 7.3 million minors live in California, one of every nine children in the United States. A greater percentage of these children are refugees and other limited-English proficient people than in any other state. Over 50% of the school-age population is of Hispanic, black, or Asian heritage. A large percentage of children are living in poverty or otherwise qualify for public support services.

* *Fragmentation.* Approximately 160 programs serving children and youth, overseen by 37 state entities, exist in California. They lack a unifying policy and coordinated, long-range planning; because of this fragmentation, it is not even clear that a centralized policy or set of plans would improve the current system. The lack of coordination among state human service departments is paralleled by the lack of coordination between the state human service departments and its 58 counties. While several counties have implemented multi-agency

human service programs which serve as national models, the lack of coordination at the state level has impeded efforts to spread them more widely to other counties in California.

* *Data*. A primary obstacle to simply understanding the problems involved in reforming California's human service systems is the lack of useful data. There are significant gaps in our knowledge about children and the programs and services they need and use; in some agencies, there is no way to tell how many children are receiving services by the way data are collected. Additionally, differing data collection procedures make it impossible to compare data across agencies. Without coherent data, there is no way to tell if the services provided are working. For example, schools have no way of knowing how many and what kinds of services their students are receiving through other human service agencies.

* *Funding*. Although California is one of the wealthiest states in the nation and has the greatest number of K-12 students enrolled, the share of our wealth we spend on public education is among the lowest of all states. The numerous state and federal categorical funding mechanisms discourage creative, multi-agency programs. Differences across agencies in mandates or entitlement status contribute to the difficulty in collaboration and integration of programs at the district and school levels.

* *Policy*. California has no state policy that crosses lines defining its values, intentions and goals on behalf of its children. There are no long-range frameworks to set priorities for, coordinate and guide the allocation of financial and human resources for children; no overall standards of care; no monitoring systems; and no guidelines against which to measure the overall impact of public services on California's children.

* *Accountability*. As the PACE report documents, with the exception of schools, human service assessment and evaluation efforts focus predominantly on the inputs and procedures associated with the *systems* that serve children, not on the outcomes that are supposed to result from the services. Without clear program outcome criteria and accountability mechanisms, there is no way to tell whether individual services are effective or whether clusters of services are working together to produce a common outcome for the individual client.

The Need to Emphasize Prevention

The predominant focus of nearly all of California's human service systems is acute intervention, not prevention. For example, categorical funds are available to subsidize the institutionalization of emotionally disturbed children ($600 per day), but not to provide school mental health workers; special funds are available to place children in emergency shelters ($4,000 per month), but not to fund parent education and support services adequately; funds are earmarked for students who are functioning well below grade level, but not for intervening with students who are just starting to slip behind. The tragedy in this is that all available evidence indicates that prevention and early intervention are more successful educationally, socially, and financially than remediation efforts.

In large part, California's overreliance on acute services is dictated by the mandates accompanying legislated state and federal funds, and other factors outside the control of service planners and providers.

There is increasing recognition that prevention services pay future dividends. For example, the Perry Preschool Project conducted over a 20-year period by the High/Scope Educational Research Foundation in Ypsilanti, Michigan, demonstrated persuasively the cost-benefits of preschool programs for low income children at risk. Every dollar invested in the Perry Preschool, over time, saved seven dollars in other social and remediation costs. Similarly, in 1988, the Commission for Economic

Development (CED) published an analysis of the cost savings to business from quality child care programs, and the California Business Roundtable recommended the expansion of preschool programs to support educational reform.

These and other studies have contributed to a growing awareness among policymakers and business leaders that the investment of resources in the preschool years and throughout a child's school years pays off in both increased human capital and significant cost avoidance for public social services down the road.

The historical lack of focus on preventive services has resulted in education, health, mental health, social service, and juvenile justice agencies that are overwhelmed with children in acute straits. In order to remedy the current situation, schools and other service agencies must continue to develop creative ways to meet the needs of acutely distressed children, youth and their families, while *simultaneously* reorienting our focus to prevention and early intervention.

Prevention is not limited to early intervention for very young children; it can occur at several points within an individual's life span or during a student's educational progress. One specific example of this is the increasing incidence of pregnant and parenting teens and their children. Research clearly documents that effective prevention for teen pregnancy begins in early elementary school, but, with few exceptions, the state's pregnancy prevention programs target high school students. Nearly 11% of the babies born in California in 1985 were born to teen parents, ranking the state second in the nation in teen pregnancies.

Prevention can also occur through prenatal care to benefit the infant. An estimated 8% of surveyed teen mothers received no prenatal care, despite the knowledge that, for every dollar invested in prenatal care, $3.38 can be saved in the cost of care for low-birth weight infants, who are at greater risk of developing serious disabilities.

In addition to adequate prenatal care, pregnant and parenting teens require a host of support services to help them with parenting, housing, school, employment, and child care. There is also widespread consensus that developmentally appropriate programs for preschool-age children can counter the environmental factors that often result from unprepared adolescent parents.

Another stark example of the need for more preventive services is the current wave of *crack babies*. Educators know that these children have been entering special education programs for infants and preschoolers in increasing numbers and are in K-12 classrooms today, although they will arrive in much larger numbers in the next three to four years. As they enroll, they will pose a tremendous challenge for special education and other school service programs.

This problem is only one of a number of issues being addressed by a state-level Interagency Coordinating Council (ICC) organized under federal legislation (PL 99-457, Part H). This legislation provides funding for planning and coordination among public agencies responsible for the provision of early intervention services to handicapped and *at-risk* infants and their families. The ICC will develop recommendations on interagency coordination and provision of services to be presented to the Governor and Legislature.

Current state and federal coordination efforts notwithstanding, and recognizing that these children are being born every day, the key questions for local officials (e.g., school superintendents) remain:

* What are the ways in which schools, working with health and social service agencies, can take action *now* to influence the agencies which work with these infants, toddlers, preschoolers, and their families to increase their chances for success once they reach school age?

* How can we prepare our schools to address effectively the wide range of potential learning and behavior problems these children are likely to exhibit once they start school?

Relationship of Education to Other Services

The second major task of the Summit discussion is to examine the school's relationship to other agencies within the community that provide services to children. Here it is important to discuss issues such as the following:

* A broader mission for schools is necessary if the variety of services children receive are to be better coordinated and more oriented toward prevention.

* This broader mission does not imply that schools will provide services which are currently within the purview of other human service agencies. Rather, it suggests that schools would take the initiative in developing collaborative partnerships with mental health, health, juvenile justice, and social service agencies on behalf of their students. This could include providing space for youth service providers from other agencies to be *co-located* at school sites, or schools acting to facilitate coordinatation of service delivery to students.

* The family's role is critical. Schools and other service agencies must augment, not replace, the role of the family. Strong support services for parents and other family members and strategies to involve parents in school-community planning and program implementation efforts are crucial. Such strategies as having parents join with the school staff through governance and management teams and mental health teams have been found to be effective in improving student academic performance (Comer, 1988). Also, families supporting students in their participation in certain out-of-school activities, such as doing homework, performing household chores, reading and engaging in discussions with adults, have also been found to be effective in improving student academic performance (Clark, 1988).

* Time and resources for training school and other agency staffs in new roles are essential. For example, many school staffs are already overwhelmed as they work to learn more sophisticated curricula and teaching techniques. They must be given additional time to learn the roles that added coordination with service agencies will require, and to provide leadership for such programs as having high school and college students, as well as older adults, tutor students to ensure that they stay current with their academic work. Similarly, service agency personnel will need substantial training to enable them to work effectively with schools. There is a clear analogy to industry in that, as the school's clientele changes, school staffs need new skills to be able to work with them and training is essential to provide them with these new skills.

* Promising experiments in interagency coordination in California and nationally must be nurtured and carefully studied. For example, California has a number of counties which have implemented multi-agency human service programs which can serve as national models (e.g., San Francisco County's Teenage Pregnancy and Parenting Project, Ventura County's Children's Mental Health Project, San Bernardino County's Children's Network and First Fund of Children's Resources) and could provide valuable technical assistance support to other California cities and counties considering similar projects. Senate Bill 997 (Presley-Brown), enacted this year, allows for significant county-wide coordination projects.

The Department of Education's 1989 *Healthy Kids, Healthy California* initiative directs schools, districts, and county offices of education to enlist broad-based community support in the development of comprehensive health promotion programs in each school. An important component of *Healthy Kids,*

Healthy California is the Department's goal of drug-, alcohol-, and tobacco-free campuses by 1996. Its drug, alcohol, and tobacco use guidelines call for schools, districts, and county offices of education to establish formal partnerships with parents, community leaders, and local information, treatment, and law enforcement agencies, which will bring all of their resources to bear on a collaborative student drug-, alcohol-, and tobacco-use prevention program.

A project initiated this year in the child development area involves *Local Coordination Grants* administered by city and county governments. Over 30 grantees have been awarded one-time only grants of $25,000 each by the Department of Education to improve delivery of child development services in local communities by enabling local regulatory agencies and the private sector to increase opportunities for public and private child care programs to operate successfully.

Another promising practice emerging in communities is the linking of schools and the business community with the goal of reaching agreement on performance standards for entry into jobs. Schools will then assure that curriculum content reflects the standards, and that students are aware of those standards in order to facilitate their successful transition from school to work. These and other joint/community programs can improve the successful entry of students into community colleges and trade schools, as well as employment opportunities, and should be encouraged. Students who can benefit from these joint programs are students who neither drop out nor plan to enroll in college. These students are often not motivated to seek particular attention, but they may have no clear sense of what they need to do to be successful. By working with employers and community colleges to define their entry expectations and the skills students will need to perform succesfully, schools can more effectively help students meet these standards.

Approaches such as these must be studied and evaluated, and procedures for maintaining data must be refined and improved to allow for meaningful longitudinal analysis.

Education Issues

The task of examining the roles of schools has two parts: as discussed earlier, a reformulation of the school's relationship with other agencies is crucial. In addition, it is important to examine what should be done within schools to help all students, and particularly students at risk, to be successful. This involves examining curriculum content, redesigning curriculum and instruction, and rethinking current methods of deploying resources. In short, rather than functioning as what one observer called *a second system* parallel to the basic programs, the mix of categorical programs should serve as a *safety net* geared to provide early diagnosis of students' needs (e.g., through mechanisms like student study teams) and interventions which will help them get back on track and remain there.

Observers have cited a variety of issues involved in efforts to effectively coordinate categorical programs with the regular program and with one another:

* The specific nature of existing eligibility criteria and screening procedures for programs such as special education and Chapter 1 excludes many students who may be considered at risk for failure from needed educational assistance. Consequently, many students do not receive specialized services in the classroom or assistance from special programs until they have demonstrated such a severe failure pattern that they are formally referred to a special program.

* Too often, once a child is placed in a categorical program or in many lower academic *tracks*, there is an inclination toward lowered expectations for academic and social skills success. There is abundant research (see Slavin, 1989, for an overview and review) that suggests that low-achieving students who receive special services are traditionally isolated from peers through pull-out and in-class remedial instruction and may receive a separate curriculum.

Instructional content differs from that of grade-level peers and focuses on remediation and mastery of low-level skills to the detriment of the development of higher-level problem-solving, thinking skills. Even though the new Chapter 1 (compensatory education) law (P.L. 100-297 of 1988) emphasizes instruction in *advanced skills*, many schools and districts are only now beginning to develop programs which address this new requirement.

* Traditional assessment practices are often too narrow and drive instruction toward *a narrow skill-and-drill* focus, rather than toward teaching the richer, more sophisticated curriculum students will need to learn to succeed in today's job market or in higher education.

* Despite the fact that many students with special needs require and/or receive services from multiple agencies, educational programs are not usually well coordinated with other social and community services.

The Department of Education has been working toward more effective coordination support of the regular program and categorical programs, particularly special education, state compensatory education, and bilingual education programs.

One coordination effort is the School-Based Coordinated Programs Act of 1981 (SBCP), which allows schools more flexibility in providing state categorically funded services to students who need them. Districts which have demonstrated success with SBCP focus on reorganizing categorical services to meet goals such as the following: 1) to tightly coordinate all categorical programs and focus them on preventing dropouts and in-school failure through the early systematic identification of learning and behavior problems, and 2) to develop an array of instructional strategies which will enable more students to be successful in general education classrooms. The central tenet is that early, ongoing identification of learning and behavior problems and intervention through adaptation of classroom instruction are the most promising approaches for reaching children before they fail. Unless and until services are approached as a continuum ranging from prevention through intervention and recovery, we will continue to see an *all or nothing* approach oriented toward the most acute cases only.

The Department of Education is also mounting an effort to coordinate special and general education more effectively. The following changes are being considered for special education: (1) a shift in emphasis from student-centered problem identification to intervention through increased pre-referral activities; (2) equitable, effective assessment practices which lead to appropriate instructional planning; (3) a full range of instructional strategies which make core curriculum accessible and available for all students, including those with special needs; (4) improved coordination of special education with other categorical programs and with general education through alternative educational service delivery approaches, such as collaborative teaching and collaborative consultation; and (5) an emphasis on accountability based on student outcomes and program quality indicators.

The pressing need to improve services to limited English proficient (LEP) students poses another set of program development and coordination issues. The growing numbers of language minority students in California schools present tremendous challenges for educators. The population of LEP students is growing rapidly and is extremely diverse. Over 1.4 million of approximately 4.6 million students in California public schools are language minority students, 1 million of whom are Hispanic. The LEP enrollments alone grew 8% in 1988 and 14% in 1989. LEP students vary in a number of regards, including (1) educational experiences; (2) proficiency in their primary language, as well as in English; (3) familiarity with U.S. institutions; (4) socioeconomic status within the larger community; and (5) family experience and support for education.

In one school district, for example, LEP students may be:

* recently arrived from Mexico with differing levels of previous educational experience;

* Hmong refugees with no previous educational experience or written language; and

* religious refugees from the Soviet Union who are relatively well educated.

As a result, in most cases the traditional model of *remedial* educational assistance does not apply to language minority students. Of course, some LEP students may be learning disabled or experience difficulties in working at grade level for reasons other than their lack of full English language proficiency.

The major issues which educators of LEP students must address are:

* English language acquisition;

* Acquisition of academic skills; and

* Positive adjustment to life in a complex, multicultural society.

Providing services in each of these areas, particularly if the number of students is large, requires that school staffing, staff training, materials and external support be altered. Teaching personnel need to be trained in cultural sensitivity and second language acquisition strategies; they need to consider how to integrate such instruction within the existing curriculum and instructional systems. As students acquire English, they need to be supported in the primary language in order to develop academic language and thinking skills, as well as content knowledge. Teaching and paraprofessional personnel should be trained or hired to provide such primary language support. Again, teaching staff must work to integrate language support within the existing curriculum and instructional systems.

Materials for both English language acquisition and primary language instruction need to be acquired to ensure that LEP students learn their district's core curriculum. Instructional strategies need to be implemented which assist LEP students to succeed within the language majority classroom. Staff members also need to become familiar with strategies and training, such as cooperative learning and Teacher Expectations and Student Achievement (TESA), which address issues of educational and social adjustment.

Beyond the need for schools to accommodate the language diversity of students, there is a need to assure that staff training and program content and materials are sensitive to cultural issues and the implications of culture on learning. For example, research has shown that cooperative learning methods are more successful with some students where that style of shared responsibility in completion of a task is more in tune with cultural mores, and that varying the lapse time between questions and answers for student response with students of different cultural backgrounds increases the chance of active participation in certain classroom activities. Obviously, engaging students in meaningful curriculum and instruction increases the opportunity for successful learning. Recognition and accommodation of the needs of the culturally and linguistically diverse student populations in our schools today must be a part of effective program planning.

Support services must also be provided for limited-English proficient (LEP) students and their families. Services to these children and families must be linguistically and culturally appropriate. A range of issues, such as child care, health services, mental health services, after-school activities, progress reporting and the school lunch program must be addressed. Access to other school support systems should also be provided; students may require speech therapy, be learning disabled, or qualify for services from Chapter 1/State Compensatory Education programs. Students and their families may also require other social services. Thus, reorienting school programs in collaboration with other support systems for families of LEP students will result in the most effective services for LEP students.

Conclusion

California's over-reliance on acute and remedial services has resulted in burgeoning caseloads of children with numerous problems across all of the state's human service delivery agencies. These children represent a tremendous social loss and financial drain on our communities. In order to remedy this situation, we must continue to serve the children in our acute service systems, while simultaneously refocusing our efforts on prevention and early intervention services.

As noted earlier, it is encouraging that many business leaders and policymakers are beginning to argue for more new resources dedicated to preventive services. At the same time, schools and other human service agencies must continue to join together to better utilize existing resources and to develop comprehensive strategies for meeting the multiple needs of *at-risk* students. Because academic failure represents one of the most profound indices of future failure, and academic failure is only one indicator in a constellation of social and health risk factors, schools have a particular stake in collaborating with other agencies to see that *at-risk* students receive all of the human services they need to succeed.

Restructuring to Improve Student Performance

Introduction

The education reform movement launched in 1983 in California and across the nation focused on raising standards. State and national strategies for reform have some common themes--raising graduation requirements for high school students, toughening the standards for teacher certification, raising beginning teacher salaries, and lengthening the school day and year. These past six years have given legitimacy to high standards being the cornerstone of efforts to improve our education system.

In California, our overall strategic plan for improving education has been curriculum driven. We have invested tremendous time and resources in building a consensus on the content of a quality core curriculum--one that teaches critical thinking, problem-solving and writing skills to *all* students. Keeping high standards as an underlying theme, we have developed a strong vision for what we hope to teach all of our students.

Coupled with the development of model curricula has been an ongoing effort to improve assessment and accountability measures to drive curriculum in the right direction. Additionally, we have embarked on training and technical assistance strategies for teachers and administrators through subject matter projects (e.g., the California Writing Project, the California Mathematics Project, and the California Literature Project) and through Administrator Training Centers.

With these reforms and investments, we have made much progress and have witnessed significant improvements in student performance. However, we need to pursue our goals more aggressively if we are to succeed in delivering the rich curriculum we have agreed upon to *all* students. As such, we must strengthen our efforts in meeting the social, language, and academic needs of an increasingly diverse student population.

A significant achievement gap still exists between Hispanics and blacks on the one hand, and whites and Asians on the other. This achievement gap, the dramatically changing demographics in California, and the changing demands on our workforce make the need for further breakthroughs in our improvement efforts imperative.

We need to educate *all* our students to higher levels than ever before if they are to compete successfully in our increasingly complex job market and if our democracy is to survive. Our students must have a strong foundation in literature, writing, history, science, mathematics, foreign language, and the arts. They must develop critical thinking and problem solving skills and be exposed to a common core of knowledge, character education, and ethical values that are the bases of our democratic society.

We need to embrace substantive and far reaching changes in our educational system if we are to achieve this vision. We think that organizational changes or *restructuring* will help us meet the higher goals we have set for ourselves.

Building upon the reforms we have put into place so far, restructuring can be used as a tool or a process to enhance learning and teaching. In a broad sense, restructuring refers to state, district, and school efforts to revise governance and management procedures to couple a clear vision with an unleashing of the creativity, energy, and intelligence of school and district staff so that students thrive. Restructuring means moving from a *rule-based* system of accountability to a *performance-based* system. Thus, restructuring also couples increased flexibility and support with increased accountability for results.

Key issues, necessary conditions, and organizational changes to consider in restructuring efforts are described below. In considering these issues and changes we must always keep in mind that the central focus of restructuring is *to improve teaching and learning for all students*.

Agreement on a Strong Definition of a Quality Education and Expectations for Students

As stated earlier, in California we have reached a good working agreement at the state level on what we mean by a quality education through such efforts as the development of curriculum frameworks, and model curriculum standards and guides.

Building on the general statewide quality standards, schools and districts must now reach agreement on their expectations for their students. A general belief in setting high expectations for *all* students must first be agreed upon at the school level, and then more specific expectations need to be agreed upon as the foundation for other changes in the system.

Discussion Points

* We know that *process* without *content* does not work. How do we ensure that the school-based management movement, which by its nature focuses on process, does not result in our losing the focus on a quality core curriculum for *all* students?

* In some districts the curricular reform movement and specifically the state's curricular standards and guides have been translated into very specific prescribed scope and sequence requirements in each subject area for schools. What role can the state play in helping districts understand the balance between maintaining curricular standards and providing flexibility to schools in deciding what to teach and how to teach it to meet those standards? How can we prevent a push for agreement on student expectations being similarly misinterpreted and resulting in prescriptions for what is taught and how it is taught?

Actions Based on the Knowledge of How Children Learn and the Variety of Ways to Teach Them

Tied to an agreement on high expectations is the need to base decisions and actions for changes in a school or district on the knowledge of how children learn and the knowledge of effective ways to teach a broad spectrum of students. Increasing teacher participation and sharing decision-making, in and of themselves, do not ensure that the decisions being made will result in improved teaching and learning. The decision-makers must continually keep in mind the focus of improving teaching and learning.

Educators have learned a lot in recent years about how to deliver a rich curriculum to a diverse student population. Restructuring involves applying that knowledge to practice. By redesigning the curriculum in areas such as mathematics, history, and science to teach critical thinking, problem-solving, and writing skills to the average student and employing a variety of teaching strategies, teachers can more effectively reach a diverse population of students.

Redesigning the curriculum and making a commitment to use different teaching strategies (e.g., teaching writing across the curriculum, using heterogeneous grouping techniques, and Socratic seminar teaching) then lead to other schoolwide changes in support of these efforts and lead to staff development and support for teachers.

Agreement on How to Measure Performance[22]

In that the purpose of restructuring efforts is to improve teaching and learning, unless there is some mechanism for measuring performance, some systems for assessment and accountability, it is impossible to know whether efforts are making a difference and ultimately resulting in improved student performance.

More specifically, before a district gives increased authority to school site staff, there should be accountability and agreement on how to measure performance. Restructuring does not mean, *everyone just doing his or her own thing*. Further, while it is recognized that restructuring takes time, and gains in student performance may not occur in the first couple of years, it is critical that the faculty at a school and the district have agreed on how they will determine if their restructuring efforts are successful or not. Mid-course corrections may be needed in certain areas. Finally, improvements in teacher attitudes and school climate are not enough. Restructuring efforts must not lose sight of their end goal of improving student performance.

In California, schools and districts already have access to many types of performance data, but we have a long way to go in terms of getting schools and districts to use these data as tools. Further, and perhaps more importantly, much work remains to be done in developing performance-based measures both at the local and state levels which go beyond norm-referenced tests of basic skills.

Discussion Points

* How do we give sites the flexibility they need while still holding them accountable? Can we get the professional buy-in and unleashing of creativity, energy, and intelligence we are after, while still keeping teachers focused on results--student performance--and holding them accountable for those results?

Rewards and Incentives

Currently there are few rewards and incentives for the people who work in our schools to improve their performance or the overall performance of their school. Our formal reward system is simply one of paying people salaries, based on an agreed upon schedule. There are many good teachers and administrators who strive for excellence in education because of their own commitment to students and their own passion for being a part of positive change; however, we need to explore how to motivate the masses of the people in our schools. We need to ask ourselves questions such as:

* What motivates people to do a good job?
* What motivates a school (an organization comprised of many people) to do a good job?
* How do we recruit and retain good people?
* How do we move towards the *professionalization* of teaching and raise the status in society of this important profession?

We then need to take some risks and try out some of our ideas in addressing these questions.

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[22] Another group at the summit is focusing specifically on the issue of accountability and assessment.

Discussion Points

* Should state and federal policy makers seriously consider major financial incentive systems for improving school performance?

* How can we better reward teachers and other professionals for exceptional work, additional responsibilities, and exemplary performance without destroying the collaborative spirit we are trying to foster?

Adequate Training and Support for Staff[23]

A large staff development effort is necessary to give staff the support, knowledge, and skills necessary to deliver a high quality program. Not only is staff development for teachers in each of the curricular areas key, but training and support in team building are essential to successful restructuring. Teachers traditionally have worked in isolated settings, behind the closed doors of their classrooms. Learning to work together as a faculty to improve curriculum and instruction or to improve the organization of their school takes time, support, and practice.

Faculty and support staff also need training about different cultures and new teaching strategies. At the same time, principals need training in leading and facilitating change. Central office staff must learn to become resource consultants and supporters rather than enforcers of rules and regulations.

Changing Roles and Relationships for Organizations

At the federal, state, district, and school levels roles and relationships must change as we move from a *rule-based* to a *performance-based* system.

If we are to move toward a *performance-based* system, it means moving away from a *rule-based* system. Rules and regulations affecting schools come from many places, including: state and federal laws; state and federal department policies, procedures, and practices; school district governing board policies and procedures; district administrators' rules, procedures, and practices; etc. We all have a part in re-examining what we do and how we do it to make sure that we are not impeding improvement efforts. If schools and districts agree to be held accountable for performance, then we have a responsiblity to *get out of the way* in addition to providing support and assistance.

In the short run, waivers at the district, state, and federal [illegible] are a mechanism for easing up on rules and regulations, but in the long run, fundamental [illegible] and organizational practices will need to be explored.

Changes in the Federal and State Roles

Restructuring the federal and state departments of education to emphasize program leadership, performance goals, and support--and to limit time spent checking for compliance with rules and regulations--will take deliberate and aggressive actions on the part of our state and federal leaders.

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[23] Specific needs and recommendations for staff development will be covered by one of the other working groups at the summit.

Changes in District vis-a-vis School Roles

As districts move from a *rule-based* to *performance-based* system, they need to revise their governance and management procedures to empower the people at the site level to improve performance. Increased accountability for results is coupled with increased flexibility and support. The district thinks about how to release the creativity, energy, and intelligence of the school staff and focus them on improving the school for students, rather than thinking about how to control the actions of the school staff to comply with district rules and procedures.

School-based management is viewed as one means of shifting the district/school roles. Many approaches are currently being tried; however, the overall intent is the same. That is to foster discussions at the school site among those who are closest to our clients (the students) to better organize for improvement. Experience has shown us that when a core team of the faculty, school administrators, and parents come together at a school to take responsibility for the direction of the school, and the team effort is supported from above, the school and student performance can dramatically improve. The various stakeholders in the education of the children at that school become empowered, begin to share the responsibility for outcomes, and go to work on how to improve student performance in that school.

Changes in Labor/Management Relations

While not discussed much in the literature on restructuring, the relationship between the employee organizations and management seems to be a predominant factor in school districts' successes in launching major restructuring efforts. We have seen repeatedly, districtwide restructuring efforts begin with a 3-4 year labor contract which has been agreed upon by all parties.

Labor organizations and management in and outside education have adopted more cooperative bargaining techniques after concluding that confrontational tactics are counterproductive. In some school districts we are seeing cooperative strategies based on agreement about performance expectations replacing confrontational attitudes at the district level which previously threatened performance at the school sites.

In simple terms, when there is a willingness on the part of all groups to work together toward the common goal of enhancing student learning, the chances of realizing true gains in student learning are much greater.

Changes in School Organization

Linked to redesigning curriculum and instruction are changes in the way a school is organized to deliver instruction. Succeeding in teaching sophisticated mathematics to the average and *at-risk* student will likely take more than changing the way a teacher is teaching; it will take changes in the design of the school itself. Examples of efforts to redesign school organizations to improve instruction include: schools within schools or *house* structures, block scheduling, team teaching, merging grade levels (e.g., combining kindergarten through grade 3), and assigning a team of teachers to a group of youngsters for more than one year.

Changes in Parents' Choices

Along with these changes in how schools operate comes a discussion on creating more choices for parents and students. Although increasing parent choice is *not* a panacea or an effective reform in and of itself, there is an argument for it going hand in hand with other restructuring efforts.

The Department of Education sponsored legislation this last year to provide for *controlled* choice among public schools with certain protections to be set forth in law ensuring that: racial and ethnic balances are not adversely affected, adequate information on choices is provided to parents, neighborhood children are given priority in a neighborhood school, schools are protected against unreasonable financial hardship, and facilities are taken into consideration.

Discussion Points

* Can site-based management or shared decision-making work without a clear district vision, district expectations, and a strong consensus on outcomes at all levels?

* The California School Improvement Program in which we now invest almost $300 million each year is philosophically in sync with the school-based management movement, yet in some schools it remains ineffective; and, even where it has been effective, it has rarely resulted in schoolwide and district restructuring. How can we build on the successes of SIP and foster greater restructuring for improving student performance with this program?

* What is the state's role in furthering the use of collaborative bargaining processes which lead toward broader collaborative labor/management relationships?

* How do you get substantive collaboration rather than procedural collaboration?

Changing Roles and Relationships for People

District Governing Boards and Administrators

To move from a *rule-based* system to a *performance-based* system district administrators are finding it necessary to change their roles. They are trying to move from being enforcers of rules and regulations to being service providers--to providing leadership and support for a clear vision and strong performance goals and providing schools with the assistance they need to reach those goals. Meanwhile their district governing boards are needing to shift their focus so as to set broad policy direction, articulate a clear vision, set specific performance goals for each school, and re-think past and future practices in adopting rules and procedures which potentially *get in the way.*

Principals

Principals need to provide leadership and facilitate restructuring efforts; create an environment for change; encourage collaboration, shared decision-making and teamwork and involving teachers, parents, students, and the community. The district needs to give principals the authority, support, resources, and flexibility to operate, and then to hold them accountable for results.

Teachers and Other School Staff

The talent and expertise of teachers and other school staff should be fully utilized to bring a dynamic and challenging curriculum to the students. At the same time, teachers and other school staff share in the responsibility for improving student outcomes.

Teachers' roles change as they work less in isolation and learn to work collaboratively, to be a part of a team trying to improve curriculum and instruction at a school. Their roles also change as their scope of focus and responsibilities expand as they get more involved in schoolwide issues. For example, teachers may take on new roles in the budget process, participating in decisions on the

budget beyond employment issues. Further, through their professional organizations, teachers can take on important leadership roles in providing a national vision for excellence.

Discussion Points

* How does restructuring change the nature of the policies set by district governing boards? Stipulating that accountability systems would be agreed upon, what kinds of policies can be delegated or decentralized and what kinds of policies need to reside at the school board level?

* What new skills will principals need and what kind of relationship should the central office have with principals to ensure that they do not end up isolated and left out of the restructuring discussion? This is particularly important if the district is heavily involved in negotiating changes with the employee organizations at the district level.

* Prior school-based management efforts, particularly the School Improvement Program, have placed a heavy emphasis on parent involvement (e.g., through school site councils). Some might argue that the current school-based management and restructuring efforts focus primarily on the changing roles among the professionals and do not include a strong role for parents. What is the appropriate role for parents in the current restructuring movement?

* What is the role of other school staff, (e.g., classified employees) in restructuring efforts?

Conclusion

In conclusion, as we consider issues and changes in our educational system under the auspices of *restructuring*, we must continually check ourselves, our ideas, and our actions against our unifying purpose--to improve teaching and learning for *all* students.

Promising Restructuring Efforts Underway in California

Here are examples of some promising restructuring efforts underway in California, as well as some brief descriptions of a number of state-sponsored programs in existence in California which are worthy of examination in the overall discussion on restructuring. We need to ask ourselves how well are these programs working and how can we improve them given the understanding we have of restructuring needs?

San Diego Unified School District

San Diego has begun a districtwide restructuring effort focused on improving teaching and learning. It is based on a philosophy that for schools to restructure, school board and central office roles must change to create a climate for risk taking and innovation. Some 35 schools in the district are in the process of restructuring.

The role of central office administrators is to act as collaborators rather than controllers. Instead of making decisions from the top down, central office administrators are asked to show their leadership and resourcefulness by helping schools make their ideas and goals work. One common goal is kept in mind throughout the district, and that is to provide better educational opportunities for all the children in their schools.

Florin High School, Elk Grove Unified

Three years of planning went into the design of this new high school which opened last fall. The principal selected for this school was released from other duties for a full year of planning with a core team of teachers. Together they developed a strong vision for this restructured school which is based on a *divisional* rather than a *departmental* approach. Linkages are made between the disciplines (e.g., English and history-social science, or mathematics and science). At the same time the standards are high for *all* students with a rich curriculum based on the state frameworks being delivered through a variety of teaching strategies. Faculty involvement is very high and there is a strong sense of excitement at this school.

Redwood City Elementary School District

School-based management, restructuring schools through the use of cooperative learning, peer coaching, and assistance are all part of what is going on in this relatively small district.

Building on the School Improvement Program (SIP), this school district has been working to foster school-based management. Their commitment to the SIP model was so strong that the district used its general fund dollars to provide SIP-like discretionary grants to their schools which were not receiving state SIP monies.

With assistance from a private foundation, this school district is also engaged in an intensive inservice program which uses the teaching of cooperative learning to the entire faculty of a school for a two or three year period as a vehicle for schoolwide restructuring. Starting with a thorough understanding of cooperative learning, the faculty then redesigned their courses, as well as the school day, to help them deliver a rich curriculum to all students. The roles of teachers and administrators change as they become less isolated and learn to work collaboratively and to assist one another.

Policy Trust Agreements

For the past two years, 12 California school districts and their teachers' unions have been experimenting with a new form of labor accord called Policy Trust Agreements to enhance their schools' educational capacity. The Trust Agreement Project, a cooperative effort of the California Federation of Teachers, the California Teachers Association, and the California School Boards Association, under the auspices of Policy Analysis for California Education (PACE), is testing the proposition that labor relations can make a strong contribution to school reform.

Trust agreements are designed to specify educational problems of joint concern to teachers and school management and to establish mechanisms for working on these problems outside of the normal collective bargaining process. Trust agreements vary tremendously from district to district. For example, several districts have chosen teacher evaluation as their focus, while others have built their agreements around school-based management.

The agreements are written compacts between a school district and its teachers. The compacts encourage shared decision-making responsibility between teachers and school administrators and, thus, seek to alter traditional school district authority relationships.

Descriptions of Selected State Sponsored Programs

The "Caught in the Middle" Middle Grades Reform Effort

In 1986, California launched a statewide effort to improve its middle schools which involved a major restructuring of these schools. It is encouraging that three years later test scores are up and the efforts of educators in this area seem to be paying off. Our 8th graders have gone up the equivalent of half a grade level in this short time period--a marked and impressive gain.

The middle grade reform effort involved educators from throughout the state developing a common vision for middle schools which was tightly coupled with our curriculum reform efforts. A statewide task force of talented educators was formed and hearings were held throughout the state. The immediate result was our publication titled *Caught in the Middle*.

With the vision clear, schools became involved in site-level planning efforts and support was then given through a network of partnership schools interested in the reform effort. Additionally, in the second year of this effort, the state provided expansion monies for the School Improvement Program in grades 7 and 8, which gave these schools yet another boost of support.

At the same time, accountability was clear. We have an 8th grade statewide test, which was recently broadened and strengthened to include writing, science, history, problem-solving in mathematics, and more demanding comprehension.

A clear vision, tightly coupled with curricular reform, school level planning, support through a cadre of schools, additional discretionary resources to support the reform, and accountability, appears to provide a blueprint for how to proceed in elementary and high schools.

The School Improvement Program (SIP)

A voluntary program set forth in state statute which provides small discretionary grants ($30 up to $107 per ADA) to school sites for school improvement. Philosophically, SIP is intended to encourage student-centered instructional programs to improve achievement. School-based management and shared decision-making, through the use of a statutorily prescribed School Site Council, are SIP's centerpieces.

Approximately 20% of the state's secondary schools and over 90% of the elementary and middle schools in California will be participating in SIP by the end of this year. This program is an example of an attempt legislatively to stimulate a school to foster discussions at that site to better organize for improvement. It sets up a structure in which those individuals closest to the students become more involved in making decisions which potentially are significant in their effect on the instructional program at that school.

SIP is not all it can be in some schools, however, because of the limited scope of the planned improvement strategies and the program being viewed as a source for a *pot* of money to be administered as just another categorical program or just a funding source to hire aides.

School-Based Coordination Program (SBCP)

The Legislature enacted the School-Based Coordination Program (SBCP) Act in 1981 to provide school site flexibility in the use of certain state categorical resources. The Act gives districts and schools the opportunity to use this flexibility to ensure that all students, including the students with

special needs, receive a program rich in curriculum content, as well as problem-solving and critical-thinking activities.

In the years following the passage of the Act, some school districts and schools took advantage of the flexibility offered; the majority, however, did not. The primary reason cited in a 1987 study of the lack of participation was lack of information. A number of things have changed since that time which have significantly increased program participation.

First, the School Improvement Program statutes *sunsetted*, and while the funding and intent of the program was continued by the Legislature, the provision became inoperative under which schools could use up to eight days for staff development activities and/or to advise students while receiving full average daily attendance (ADA) reimbursement. Hundreds of schools which were taking advantage of that provision of law then chose to participate in SBCP if for no other reason than because it had a similar provision. Second, recognizing the tremendous increase in interest in SBCP, the Department of Education re-examined its own requirements for the SBCP, increased the flexibility in the program administratively, and issued a comprehensive *Program Advisory* to the field encouraging schools and districts to participate in the program.

Not surprisingly, districts and schools which experience success with SBCPs generally start with a shared vision of what students should learn through the district's core curriculum and a conviction that all students can and should learn those skills, knowledge, understandings, and values. They then utilize the flexibility authorized by the SBCP Act to organize and coordinate school level resources in an effort to ensure that all student succeed in the core curriculum. Like the School Improvement Program, the SBCP involves the use of a school site council and a school level planning process. Included in the authorizing legislation was the intent *to provide greater flexibility for schools and school districts to better coordinate the categorical funds they receive,... and to focus the authority to exercise such flexibility at the school level, with the approval and under the policy direction of the governing board.*

Prevention/Intervention in Low-Performing Schools

A number of strategies for assisting schools *at-risk* and low-performing schools have been developed in the past few years both by the state and by a private non-profit organization, the Achievement Council. Two of the state's efforts are C-LERN, initiated by the Specialized Programs Branch of the Department of Education, and a regional effort under the Department's newly established Program Assistance and Compliance Branch.

California Local Education Reform Network (C-LERN) is a prevention/intervention strategy which is being used primarily with schools *at-risk*. C-LERN schools participate in a structural change process that includes using a *fault-tree analysis* to identify critical problems that prevent the schools from being effective.

In 1989, 81 schools chose to participate in C-LERN. The district superintendent, central office administrators, school community, and a school site leadership team consisting of classified, certificated, administrative staff, and community representatives are invited to work on the project. The school site leadership team develops a school mission and systematically diagnoses school needs focused on preventing student failure.

The Program Assistance and Compliance Branch is also working with schools *at-risk* through regional efforts in which the Department of Education is working with cadres of districts in particular regions to customize services and target areas for program improvement.

Finally, the Achievement Council, a private non-profit organization begun in 1984, has the sole purpose of improving the student achievement of minority students in California. The Achievement Council has used a variety of approaches including: intensive assistance to a school from an outside consultant; summer institutes for teams of staff from schools to develop visions and action plans; summer institutes for principals only and also for school counselors only; and brokering staff development services for targeted schools, parent, and community education.

The California School Leadership Academy

The California School Leadership Academy (CSLA) is an outcome of the Hughes-Hart Educational Reform Act of 1983 (SB 813). The mission of the Academy is *to help aspiring and practicing school administrators strengthen their instructional leadership skills and strategies in order to improve student learning in California*. CSLA's focus is instructional leadership, which is considered the crucial responsibility of school administrators.

CSLA offers a three-year program to school personnel throughout the state through 13 regional Administrative Training Centers. In its first full year of operation, 1986-87, CSLA served approximately 2,000 participants (primarily principals). In 1987-88, participation increased to 3,000. In 1988-89 over 4,500 individuals participated. Since 1986-87, two convocations have been held for participants who have completed the three year program.

As a result of an informal evaluation of the program, the training modules have been revised for 1989-90 to be more consistent with the California reform agenda.

California Advanced Academy for Executive Leaders

The California Advanced Academy for Executive Leaders, a joint effort of the Department of Education and the Association of California School Administrators, is currently being developed to assist superintendents in creating effective school districts. The Academy's purpose is to provide research, materials, support and professional development activities to assist superintendents in restructuring school districts based on effective school district criteria and to facilitate systemwide change and improvement.

Academy activities will include research, the development of an information base related to effective school districts, identification of the role of superintendents in effective districts, identification of exemplary practices of experienced superintendents, the development of a training curriculum for superintendents, providing training, technical support and the identification of related policy issues.

The Academy is still being developed and will identify a pilot group of superintendents to participate in its activities this winter.

Teacher Preparation and Recruitment

Executive Summary

The success of educational reform is inextricably tied to the knowledge, skill, and abilities of the teachers and administrators to develop and deliver high-quality educational programs. To date, the California reform strategy has focused on the definition of a professional consensus on what needs to be taught in each subject area and the systematic dissemination of that information to all California educators. The process for and methods of curriculum definition are now well established. While a number of worthwhile efforts have been initiated to assist educators in the delivery of this challenging curriculum, many are in their formative stages or of limited size and scope. This paper addresses the next great challenge for educational reform in California, the improvement and refinement of the professional preparation and development of classroom teachers and school administrators. This will require a comprehensive strategy that addresses educator: (1) supply and demand; (2) preparation; (3) induction (4) assessment; and (5) professional development.

Introduction

The 1980s have been a decade of unparalleled nationwide attention to the reform of public elementary and secondary education. California has been at the forefront in determining the nature and content of much of this reform agenda.

> The Commission found that not enough of the academically able students are being attracted to teaching; that teacher preparation programs need substantial improvement; that the professional working life of teachers is, on the whole, unacceptable; that the serious shortage of teachers exists in key fields.
>
> *A Nation at Risk*, 1983
>
> Between 1983 and 1985, more than 700 pieces of state legislation aimed at upgrading the quality of the teaching force were developed.
>
> *The Evolution of Teacher Policy*, 1988

In 1983, while the report of the National Commission on Excellence in Education, *A Nation at Risk*, was galvanizing public opinion in support of comprehensive reform, California adopted its landmark legislation, SB 813. The legislation commissioned some important first steps involving the content of, and time for, instruction. The significance of SB 813, however, is not found in its specific provisions, but in the lasting nature of the quest of educational excellence that it initiated in the state.

From the outset, the improvement of curriculum and instruction has been the foundation of California's reform agenda. Groups of leading educators were brought together to develop a professional consensus of what should be taught in each of the subject-matter disciplines. They were challenged to define a curriculum for the 21st century, one that would give students the skills they would need in an economy where creativity, flexibility, and critical thinking will be considered survival skills.

The establishment of a professional consensus regarding the content of elementary and secondary instruction was only the beginning of educational reform. Next came a careful review of the curriculum guidance and technical assistance that the state provides to ensure that the content message was clear and consistent in all activities. This resulted in: (1) the development of model curriculum standards for secondary schools and K-8 curriculum guidelines which set expectations for educational program quality, (2) the revision of the elementary, middle grades, and high school quality criteria for program quality review which guide the school site analysis of program effectiveness, and (3) the revision of the curriculum frameworks in each discipline which form the basis for the adoption of textbooks and other instructional materials and guide the development of the California Assessment Program, as well as local assessment practices.

Much has been accomplished in California, but there is much that remains to be done. To make a lasting difference this, revitalized curriculum must be actually taught in the classrooms of the state. To make that possible, we will need to respond to the:

* shortage of fully trained teachers, particularly the serious underrepresentation of the state's diverse minority population;

* need to assure that educators in training will be adequately prepared to teach their subject matter;

* challenges and demands of first-year teaching that are driving many from the ranks of the profession during their initial years; and

* need for carefully planned and thoughtfully delivered professional development for the 190,000 existing teachers to upgrade and maintain their skills.

The same sense of urgency that characterizes our efforts to revise curriculum must now be applied to the challenge of strengthening the instructional and leadership skills of our prospective and active educational professionals.

> After years of teacher surplus, in 1985 jobs and job seekers were roughly in balance. For at least the next 10 years, however, there will be more jobs than applicants.
>
> *A Nation Prepared*, 1986
>
> California is taking steps to stem the exodus of talented teachers from the classroom, encourage promising college students to choose a teaching career, and ensure a higher caliber of teacher credential candidate.
>
> *Conditions of Education in California*, 1988

This means the state must make a major investment in (1) recruiting able individuals into the teaching profession and providing them with the best possible preparation, (2) supporting new teachers during their first, difficult years in the classroom, (3) establishing rigorous standards for their full recognition as an education professional, and (4) facilitating educators' continuing professional development. We have made progress in each of these areas, but there is much more that needs to be done. Most professional improvement efforts are either in their formative stages or limited in size and scope. It is critical that we build this current pilot and developmental work into a comprehensive strategy to strengthen educator preparation and ongoing staff development. We will now outline our progress, along with what might be appropriate next steps.

Recruitment: The Challenge of Supply and Demand

The long-heralded shortage of classroom teachers has arrived. Assuming that pupil teacher ratios remain constant, California will need 37,500 new elementary teachers through 1994-95. Beginning in 1990-91, secondary pupil enrollments will also increase. These students will increasingly be from low-income backgrounds. Many will not speak English as a first language, and many will have complex social and personal issues to contend with, as well as academic problems. The complexity of teaching has increased as the student population has become more diverse. Steps have been taken to improve working conditions for classroom teachers, but the traditionally low salaries, demanding assignments, and relatively flat career structure discourage university and college student interest in elementary and secondary teaching.

Changes in the supply of, and demand for, classroom teachers have occurred several times in the state's history, as a result of migration or unexpectedly high-birth rates. In the past, the short-sighted solution has been simply to lower the acceptable standards for teacher credentials and, thereby, make more individuals eligible. What makes responding to the current shortfall of teachers so demanding is that the state is committed to (1) upgrading the standards for, and specifying the expectations of new teachers and (2) establishing an educational work force that more accurately mirrors the state's diverse population. With respect to the latter, the table below shows the vast disparity between the racial and ethnic make of the California student body and the state's teaching force.

Percentage Ethnicity of Teachers and Students

	White	Black	Hispanic	Asian	Other
Teachers	82.1%	5.8%	7.1%	3.4%	1.6%
Students	48.8%	8.9%	31.4%	7.5%	3.5%

As the number of black, Hispanic, Asian, and other minority students grows, the schools must employ greater numbers of minority teachers.

Who Will Teach Our Children, 1985

The recruitment of new teachers, particularly from underrepresented population groups, is one of the top priorities in California. This is particularly crucial at a time when these individuals have multiple career opportunities and assessment requirements to get into teaching. Strategies include: (1) special encouragement to prospective teachers early in their academic careers, (2) provision of financial assistance, and (3) establishment of alternative routes into the profession.

Incentives to Teach

The Education and Business Roundtables are both initiating collaborative efforts to identify students in the middle grades and high school, and encourage them to complete their high school requirements, enter one of our community college or four-year postsecondary systems, and consider teaching as a career. There are currently a number of pilot programs to encourage individuals to consider careers in teaching. Many of these represent partnerships between elementary/secondary education, business and industry, the community colleges, CSU, UC, and private postsecondary institutions. Some of the more successful projects include:

* A Minority Teacher Recruitment program (Merritt Community College, UC, Berkeley, CSU, Hayward) is designed to identify minority students with an interest in teaching. After two years at Merritt, participating students complete their studies at the university level. In the third year of the program, approximately 86 students have been served.

* Pool of Recruitable Teachers (PORT program), supported by a Carnegie grant to CSU Dominguez Hills, works with middle schools to improve academic achievement of minority students. More than 225 students have been identified by the program which annually serves about 75 students. In addition, three times that number of elementary school students (n=675) have been served by being tutored by the older students.

* Crenshaw Teacher Training Magnet (LAUSD and CSU Los Angeles), a magnet high school, designed to recruit and train talented high school students interested in becoming teachers. The program has been in operation for four years and annually enrolls 50 students in their *Becoming a Teacher* program.

* Project Socrates, initiated in 1989, is an intersegmental project, supported by Pierce College, CSU, Northridge, LAUSD, and Los Virgines High School. An initial summer training institute brought 85 inner city high school students together for orientations to teaching and an academically oriented summer school program. These students are working in cooperative

groups to formally observe teaching and participate in younger student tutoring during 1989-90, and there are plans to support them as a cohort during postsecondary training.

- Teacher of Tomorrow Clubs are springing up in a number of California schools. In Fresno, Modesto, and Los Angeles, students can take elective courses on *The World of Teaching* and participate in tutorial activities. There are currently 16 Future Teacher Clubs in the San Fernando Valley, three sponsored by CSU, Los Angeles, and another 15 sponsored directly by Los Angeles Unified. These groups average 15-35 students, which means that between 500 and 1000 students in the greater Los Angeles area alone are participating in the program.

Financial Assistance

Debt accumulated through financial aid programs tends to discourage youngsters who might otherwise consider a career in teaching. The Assumption Program of Loans for Education (APLE), originally established as SB 813, provides for the forgiveness of student loans for approximately 500 participants. The program provides for the assumption of up to $8,000 of participant student debt, if the individual either (1) obtains a teaching credential in a high-need field or (2) teaches for three years in a school with a high proportion of low-income students.

There are serious shortcomings with a financial incentives strategy based on encouraging students to assume debt that will only be partially forgiven at some later time. The prospect of the accumulation of a large financial obligation to enter an historically low-paid profession is not an inviting opportunity. Further, the factors to be eligible for loan assumption are not solely in the control of the individual.

Alternative Routes into the Teaching Profession

The traditional path into teaching of five years of academic preparation can discourage prospective candidates. For such students, an *internship* option has been established at both the institution of higher education and school district levels to allow individuals to actually assume full-time classroom duties, while completing their professional preparation. It is estimated that approximately 700 of the total number of teachers in training per year are pursuing these alternative routes. While these strategies have made it easier for younger people to pursue teaching, they have not attracted large numbers of mid-career people to the profession.

Next Steps for Summit Consideration

The discussion group needs to review the three elements of state recruitment strategy and determine if additional approaches are needed. In addition, the group will need to:

* identify ways of building a comprehensive statewide strategy to encourage youngsters to consider a career in teaching;

* determine the degree that student debt discourages prospective teachers and whether *loan assumption* is a sufficiently powerful incentive for candidates, or whether a financial assistance strategy that includes scholarships and grants is needed;

* review the progress of existing alternative route strategies and determine if additional options are needed, particularly for mid-career people; and

* Identify the priority working condition improvements which might make teaching a more attractive career option.

Preparation: The Education of Educators

> In policy terms second wave reformers suggest greater regulation of teachers--ensuring their competence through more rigorous, preparation, certification, and selection--in exchange for the deregulation of teaching--fewer rules prescribing what is to be taught, when and how.
>
> *The Evolution of Teacher Policy*, 1988

Since 1970, state teacher credentialing law has required that prospective teachers must either pursue a specially designed course of study or pass an examination in a field of study other than education. A professional preparation program is typically pursued in a fifth year of post-baccalaureate instruction. During professional preparation, 12 units of course work and student teaching provide prospective teachers some exposure to the knowledge and practice of their profession, including educational psychology, learning theory, curriculum, instruction, counseling, and student assessment.

Several concerns arise from the current approach to teacher preparation. On the one hand, subject-matter courses taken by prospective elementary teachers can be survey courses and weaker versions of other more rigorous discipline-based offerings. Second, there is little incentive for university academic faculty to recognize the curriculum goals of the public schools in their courses. Third, the provision of existing law allowing candidates to *test out* of subject-matter preparation means that some candidates have weak disciplinary backgrounds. Fourth, the limitation of teacher preparation to 12 units of post-baccalaureate course work permits only a compressed program that can never be expected to equip the new teacher to deal with all the curriculum issues or have a command of all the alternative instructional strategies needed to meet students' diverse learning needs. Further, candidates are expected to be able to graft onto his or her subject-matter knowledge, the pedagogical skill acquired at this later point in their educational career. Finally, most candidates are not prepared to teach students from ethnic and cultural backgrounds that differ from their own.

Current Efforts

* *Revision of Program Review Standards and Procedures.* In recent years, the attention of the teacher training institutions, the Commission on Teacher Credentialing (CTC), and SDE has been directed toward making the education of a teacher more coherent and more in tune with the needs of the public school districts of the state. One notable example is the Executive Order issued by Chancellor Reynolds, directing each California State University campus to have an *all university approach* to teacher education. To ensure that all teacher training institutions address these needs, the CTC is revising its program review standards and procedures, to ensure that programs are effective and responsive, but it will be some time it before it can be determined whether or not the revision is having the desired effect.

* *Comprehensive Teacher Education Institutes.* Another noteworthy effort is the Comprehensive Teacher Education Institutes, which are designed to support improvement in teacher education programs over a four-year period. Through seed grants from the state, three-way partnerships among schools of education, postsecondary academic departments, and local school districts are established. Funds are provided to foster collaborative redesign and initial implementation of a revitalized teacher training program. There are currently only seven CTEI programs out of some 74 approved teacher preparation programs in the state.

> California's colleges and universities are now hiring the next generation of teacher educators. It is as important that these faculty have enhanced opportunities to teach teachers as it is for teachers to have the tools they need for teaching children. Education faculties must forge partnerships with the schools, they must collaborate more closely with liberal arts faculties, and they must strengthen the research.
>
> *The Condition of California Education*, 1985

* *Strengthening of University Based Subject-Matter Assessment.* The CSU, which trains a majority of elementary/secondary teachers in California, has undertaken the systemwide definition of discipline-specific standards for prospective teachers. Individual campus capacity to uniformly assess the candidate mastery of these standards is still largely unknown.

Next Steps for Summit Consideration

The discussion group will need to review the progress of current efforts to improve teacher education. Expanded or additional efforts are needed to improve the coherence of a teacher's education. In addition, the options to test out of academic preparation and the 12-unit limitation should be reviewed to see if change is warranted.

Induction: The Critical First Year

There is growing evidence that no matter how strong the collegiate preparation of teachers may be, the demands of classroom teaching often exceed the individual's readiness to meet those demands. Several studies have found that as high as 50% of all new teachers leave the profession by the end of their fifth year. Although beginning teachers have earned bachelor's degrees and completed professional education course work and student teaching, they still need assistance in many areas, in order to teach effectively. Contrary to past assumptions, student teaching is not sufficient to enable most candidates to become proficient teachers. With daily supervision by experienced teachers, student teachers rarely have full responsibility for the students in a class. These and other conditions change abruptly when teacher candidates become beginning teachers. New teachers have to integrate their prior training experiences and apply them to a specific context in which groups of students have varied academic needs.

Current Induction Efforts

* The California New Teacher Project is a research study to evaluate alternative models of supporting and assessing classroom teachers. Its purpose is to: identify the approaches that work best to encourage new teacher retention; improve their pedagogical content knowledge and skills; improve their ability to teach students who are ethnically, culturally, economically, academically, and linguistically diverse; provide additional assistance to those who need it; and assess the relative costs and benefits of these approaches. Under a variety of governance and staff development models, almost 1,000 new teachers in 23 pilot projects are receiving professional support from experienced mentors, completing university course work, and experiencing peer assistance. In addition, eight participation projects are using locally redirected funds for their new teacher support efforts. First year evaluation results were impressive; 98% of participating new teachers indicated they planned to return to teaching the next year.

> The Legislature finds and declares that the beginning years of a teacher's career are a critical time in which it is necessary that intensive professional development and assessment occur. The Legislature recognizes that the public invests heavily in the preparation of prospective teachers, and that more than half of all new teachers in California public schools leave teaching after one or two years.
>
> *SB 148, Bergeson*, 1988

* The New Teacher Retention Project in Inner City Schools provides support to several hundred new teachers in inner city schools to increase their teaching effectiveness and improve their retention rates. New teachers in San Diego, Oakland, Los Angeles, and San Francisco are provided with five forms of support: mentoring assistance with an experienced teacher, release time for observing experienced teachers, seminars at no cost to the new teachers, university consultant services, and a stipend for instructional materials.

Next Steps for Summit Consideration

The discussion group should consider the critical policy questions of *How should we make guidance and assistance for new teachers an integral part of a the state education system policy to support teacher quality?*

Assessment: Ensuring Teacher Competence

The competence of prospective teachers cannot be determined fully until they actually teach, because the circumstances in which candidates are trained and screened rarely resemble the conditions in which they subsequently work. Beginning teacher assessment measures the performances of the holders of preliminary teaching credentials, in order to help them improve and to determine whether their performances satisfy the current standards of performance for earning the professional teaching credential.

> Persons preparing to teach should be required to meet high educational standards, to demonstrate an aptitude for teaching, and to demonstrate competence in an academic discipline.
>
> *A Nation at Risk*, 1983
>
> Licensing exams need to measure a teacher's knowledge of subject matter and ability to teach it, as well as the individual's basic literacy skills.
>
> *California Beginning Teacher Assessment and Support Project Policy Seminars*, 1987

Current Assessment Efforts

* The California New Teacher Project contains an assessment component to evaluate alternative approaches to the assessment of new teachers for professional certification. During 1988-89, a variety of existing assessments of teacher knowledge and skill were evaluated, and other assessments were contracted for development. The assessment methods being evaluated include the use of: standardized written examinations of subject-matter knowledge and uniform performance assessments of subject-matter competence; on-site assessments of classroom performances; uniform exercises to test pedagogical content knowledge and skills

in controlled settings; and alternative subject-matter exams or performance assessments developed by colleges and universities. Information gained from these alternative assessments will contribute to future decisions about what kinds of assessments new teachers will need to pass to qualify for California teaching credentials.

* A number of efforts are underway to strengthen existing assessments of teaching and develop new assessment approaches. The Commission on Teacher Credentialing is working with the Educational Testing Service in the latter's revision of the NTE, primarily to include applied performance measures of subject-matter knowledge. Simultaneously, the National Teaching Standards Board is analyzing the results of initial developmental work on complex teacher assessments. The National Board hopes to be able to *board certify* teachers on a national basis sometime in the 1990s.

Next Steps for Summit Consideration

The discussion group should examine the current progress toward developing a system of assessing new teachers and address the complex questions of developing an assessment system that (1) reflects the complexities of teaching, (2) is sensitive to each teaching context, and (3) is credible to the education profession while providing useful information.

Improving the Profession

Professional Development: The Continuing Education and Renewal of Teachers. Even if we are able to recruit, prepare, induct, and retain in the teaching profession our most capable college graduates, California's educational reform will flounder unless we pay attention to the professional development needs of the 190,000 teachers currently in our classrooms.

> Our impression was that many teachers needed additional subject matter and pedagogical expertise to implement a new curriculum that both changes substantively the content in mathematics, science, social studies, and language arts, and emphasizes numeric reasoning, critical thinking, written communication, problem solving, cooperative learning, and peer tutoring. If this view is correct, staff development--indeed, massive human resources development--would be needed to enhance the classroom impact or current and future reform efforts.
>
> *Policy Analysis for California Education*

American business has come to the realize that it must make a heavy investment in retraining the nation's work force if we are to maintain our current standard of living in an increasingly competitive world marketplace. In fact, U.S. corporations spend almost $40 billion annually, excluding wages, to train and educate their employees. To remain competitive, American companies are currently training nearly eight million employees a year, close to the total enrollment in the nation's four-year colleges and universities.

Unfortunately, the nation has been slow to realize that we must make a similar investment in maintaining and upgrading the knowledge and skills of our current corps of teachers. By any measure, California does not adequately provide for the continuing professional development of its teaching force. A recent study of staff development in California's public schools found that less than 2% of the state's education funding was devoted to staff development programs for teachers and administrators. This low level of investment in professional development is even more alarming when one considers that California teachers are being asked to undertake a challenge for which they have

not been prepared. Since the time when most of today's teachers entered the profession, the economy has changed, the curriculum has changed, and the students in our classrooms have changed. Our modern society offers its best jobs to those with strong reasoning skills and quick thinking, not to those with strong backs or quick hands. No longer are there abundant jobs on the farm or assembly line that require a modest education yet provide a comfortable standard of living.

In response to the new economic realities, teachers are being asked to provide their students with a more rigorous curriculum that emphasizes creativity, critical thinking, and problem solving. The focus is no longer on the *right answer*, but on how one arrives at an answer; no longer on the accumulation of facts, but on the development of understanding.

Learning to teach this *thinking curriculum* would be challenging under any circumstances, but our teachers are being asked to provide it to more students whom the educational system has failed in the past: minority, low-income, and limited-English speaking students.

Clearly, our current corps of teachers must be provided high-quality professional development opportunities to help them to meet the new realities of the economy and the classroom. Unfortunately, that's not what they get. The California Postsecondary Education Commission's recent study of staff development in California found that *California's staff development resources are deployed in ways that generally reinforce existing patterns of teaching, conventional structures of school, and long-standing traditions of the teaching profession.*

Fortunately, research and practice have shown what needs to be done in the area of staff development. We know, for example, that staff development programs that are successful in bringing about changes in teacher behaviors and improvements in student learning are long-term in nature, often taking place over the course of months, rather than a few hours tacked on at the end of the instructional day. Furthermore, good programs provide teachers access to sound strategies that are supported by strong evidence that the new instructional skills will result in improved student outcomes.

To take what we know and provide access to high-quality staff development for our teachers and administrators, will take a much greater commitment of resources than we are currently making. Although the initial investment is steep, the cost of maintaining the status quo is even greater.

Current Efforts

* *The Mentor Teacher Program.* "If mentors did not exist, we would have to invent them," states Laurent Daloz, in his book *Effective Teaching and Mentoring*. California's Mentor Teacher Program is intended to recognize and encourage teachers to continue to pursue excellence within their profession, to provide incentives to teachers to remain in the classroom, and to restore the teaching profession to its position of primary importance within the structure of the educational system. The program breaks down the traditional isolation among teachers and allows them to work together on common instructional issues, and to assist one another in promoting student learning, school improvement, and enhanced professional status. Currently there are 951 districts, and more than 10,500 teachers participating in the Mentor Teacher Program.

* *The California Professional Development Program (SB 1882).* Money for professional development is a continuing need for California school districts, but history has shown that additional fiscal resources may be poorly spent, unless there exists an adequate source of high-quality staff development.

Created by the landmark staff development legislation, SB 1882, the California Professional Development Program acknowledges this *supply side* need for excellence by creating Subject Matter Projects in each subject area required for high school graduation. Through a network of regional centers, these projects will provide sustained and intensive professional development experiences for teachers, promote the concept of teacher professionalism, and encourage curriculum reform and improvement at the school site.

Currently, the California Writing Project, Mathematics Project, Science Project, Literature Project, Foreign Language Project, and Arts Project have been established as the initial network of Subject Matter Projects. Given current resources of $5 million a year, each project is able to train hundreds of teachers each year. If the curriculum reform is to become a classroom reality, however, thousands of teachers must be given access to the professional development provided by these projects. When additional funding becomes available, projects will be established in history and in health, nutrition and physical education.

In addition to the Subject Matter Projects, the California Staff Development Program provides resources for schools to create School Development Plans and to design and carry out professional development activities in support of those plans. Opportunities are also provided for school districts and others to join together in Resource Consortia to attack common problems through joint professional development activities.

Next Steps for Summit Consideration

The discussion group should focus on three topics related to professional development: time, fiscal resources, and quality.

The CPEC study on staff development found that *when the salaried workday and work year provide teachers with relatively little out-of-classroom time, teachers opportunities for productive staff development dwindle*. Currently, most schools have access to eight student-free staff development days. Many are reluctant to use these days, however, as they are in lieu of, rather than in addition to, instructional days.

Although it is an essential investment, expanding the time allocated for professional development activities is an expensive endeavor. Low-cost options do exist, however, and districts may choose to consider alternatives with a negligible price tag, such as (1) mini-sabbaticals that allow teachers to participate in intensive professional training for a month or a semester; (2) team teaching situations where one teacher remains in the classroom, while the other leaves the site to receive training; (3) professional development sessions that begin after the close of school on Friday afternoon, continue through the dinner hour, resume Saturday morning, and are completed by noon, thereby eliminating the need for substitute teachers; (4) accumulating small increments of instructional time daily, by extending the school day, then using this *free* time in bigger blocks for professional development; (5) using administrative staff, such as a vice-principal, teamed with instructional aides to oversee students on a field trip, thus providing the faculty with pupil-free time that can be devoted to professional development activities; and (6) summer school programs where teams of three teachers instruct a class in the morning and then, in the afternoon, critique the morning's lessons and plan improved activities for the next day.

Of course, all of these alternatives assume traditional school structures and organizations. Creative restructuring of the school day, the school year, and the roles and responsibilities of teachers and administrators might provide not only more time for professional development but also an environment where the professional growth of teachers becomes a valued activity.

Quality staff development does cost money. Although schools receive a variety of categorical funds which specifically provide for the support of professional development activities, these funds are often tied up in ongoing personnel costs, such as instructional aides. In addition, most school districts allow advancement on the salary schedule for completion of staff development activities, even when those activities are not directly linked to overall district or school improvement goals. The CPEC study on California Staff Development estimated the future salary obligations made to teachers who accrue such salary credits at $600 million a year. Ways must be found to redirect these existing resources to support the kinds of professional development needed to improve student outcomes.

While time and money constraints are compelling, they are not the only obstacles faced by those who seek high-quality professional development. Few staff development activities are developed from current educational research use classroom teachers as trainers, and incorporate the important elements of time intensive and long term training, teacher leadership and collegiality. Those that do, such as the subject matter projects and the Mentor Teacher Program, should not only be supported, but expanded as well.

Administration

If our schools are to improve, then those who lead our schools--principals, superintendents, and other administrators--must be provided with professional development opportunities designed to help them carry out their responsibilities as instructional leaders.

> Principals and superintendents must play a critical leadership role in developing school and community support for the reforms, and school boards must provide them with the professional development to carry out their leadership role effectively.
>
> *A Nation at Risk*, 1983

Too often the responsibility for professional development activities has resided with administrators who were not responsible for curriculum and instruction. In order to eliminate fragmentation and promote consistency and cohesiveness between the curricular improvement goals of a district and the professional development goals of a district, this situation needs to be changed.

Current Efforts

* *The California School Leadership Academy.* The purpose of the California School Leadership Academy CSLA) is to help aspiring and practicing school administrators strengthen their instructional leadership skills and strategies in order to improve student learning in California. The program focuses on instructional leadership and is based on the premise that effective instructional leaders are those who understand and utilize established processes or systems within any school or district to accomplish school improvement goals. Currently, CSLA has over 4,200 active participants who include principals, central office administrators, superintendents, school board members, and county/state and college/university staff. Participants must commit to participate in all three years of the program.

* *California Advanced Academy for Executive Leaders.* The California Advanced Academy for Executive Leaders is currently being developed to assist superintendents in creating effective school districts. A joint effort of the Department of Education and the Association of California School Administrators, the Academy's purpose is to provide research, materials, support and professional development activities to assist superintendents in restructuring

school districts, based on effective school district criteria and to facilitate systemwide change and improvement.

Academy activities will include research, the development of an information base related to effective school districts, identification of the role of superintendents in effective districts, identification of exemplary practices of experienced superintendents, providing training, technical support and the identification of related policy issues.

The Academy is still being developed and will identify a pilot group of superintendents to participate in its activities this winter.

Next Steps for Summit Consideration

The discussion group should analyze the changing role of the administrator in a restructured educational environment and determine the parameters of professional development that are needed to support these emerging responsibilities. Critical to this discussion is the notion that administrators must receive professional development that considers the context of their district working relationships and responsibilities. While professional development targeted to individuals is an important initial step and certainly necessary, in isolation it will not substantially improve district effectiveness, nor institutionalize educational reform. Additionally, the group should consider how best to (1) enhance and expand the professional development opportunities provided to superintendents and school board members; (2) create continuing professional development opportunities for graduates of the three year basic CSLA program; and (3) improve efforts to attract more women and minorities to CSLA.

The Global Democratic Revolution

Keynote Address

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The Global Democratic Revolution

The leaders of the democratic movement in Poland look to the United States as an inspirational example. When Lech Walesa spoke to a joint session of the Congress, he began with these three words: *We the people.* He said that oppressed people all over the world, look to the Congress as a *beacon of freedom and a bulwark of human rights.* He said that the world thinks of American democracy as an exemplar of a *wonderful principle: [a] government of the people, by the people, for the people.*"

I found it fascinating that Walesa began his speech in this way, because just last June, when the Prime Minister of Pakistan, Benazir Bhutto, spoke to the Congress, she began her speech by saluting "the three most beautiful words in the English language: We the people."

We are so accustomed to criticizing ourselves that we tend to forget that the United States remains a powerful symbol of a society that revolted against tyranny, a society whose basic documents and national experience offer hope to all who long to live in freedom and democracy.

Two weeks ago, the Czech people conducted a successful general strike that brought down the hardline Communist government. It was only a two-hour strike, but it showed that the government did not have the support of the people. One of the most moving vignettes of that strike occurred when a Czech brewery worker mounted a makeshift podium and said to the 1,500 other brewery workers:

> "We hold these truths to be self-evident: that all men are created equal, that they are endowed by their Creator with certain unalienable Rights, that among these are Life, Liberty, and the Pursuit of Happiness. That to secure these Rights, Governments are instituted among Men, deriving their just powers from the consent of the governed. That whenever any Form of government becomes destructive of these ends, it is the Right of the People to alter or to abolish it, and to institute new government..."

What magnificent words! And how perfectly appropriate to the people of Czechoslovakia, Hungary, Poland, East Germany, and Bulgaria--or to any country where the government has not been chosen by the people.

Perhaps the Nobel Prize for 1989 should go, belatedly, to Thomas Jefferson!

Some of you may have seen the scene on network television last week of Czech students singing "We Shall Overcome" in Czech. Last spring, when the brave students of China demonstrated for freedom and democracy, Americans heard and saw familiar words--like "Give me liberty of give me death"--and familiar symbols--their Goddess of Democracy was a beautiful sister of our own Statue of Liberty.

1989. What an amazing year. None of the experts predicted the incredible students uprising in China; no one predicted the collapse of the Soviet empire in Eastern Europe; no one predicted the nationalist upheavals and economic catastrophes that threaten the internal coherence of the Soviet Union itself. Not so long ago, many experts believed that the appeal of Communism was so great that its expansion was virtually unstoppable. Today, the unraveling of Soviet Communism is advancing so rapidly that no one can safely guess what Eastern Europe will look like a year from now or even what the Soviet Union itself might become.

Among the many startling events of these past few months, one lesson stands out: The *Big Lie* didn't work. The people in Eastern Europe were told, again and again, that they lived in a workers' paradise. Their despotic leaders pretentiously called themselves "democratic republics" although their governments were neither democratic nor republican. They told their people that Soviet troops

protected them from the West. They told them that the Communist Party always acted in the best interests of the people and that opposition to the Party's rule was treason against the people.

We now know that throughout Eastern Europe, the people knew that these claims were lies. As soon as Mikhail Gorbachev sent the message that Soviet troops would not prop up the Communist regimes of Eastern Europe, the dictatorships of these countries collapsed like a house of cards.

Decades of propaganda and indoctrination in the Marxist-Leninist line, from kindergarten through college, didn't work. When George Orwell wrote *1984*, he offered us a dark vision of a totalitarian state that successfully controlled the minds of its subjects. The good news--the great news--in 1989 is that the totalitarians failed. As dissident writers Scharansky and Solzenitzyn have told us over the years, you can imprison a man's body, but you can't imprison his mind and soul.

The other notable lesson of the past six months has been a reiteration of the importance of knowing history in order to understand unfolding events in the world. Every one of these totalitarian states has a dark secret that it tried to hide. Each has an official version of its history, which was parroted in the party press and in the schools. In every instance, the popular uprisings rejected the official history and demanded an honest reappraisal of the past.

In Hungary, the transforming event of the reform movement occurred a few months ago when the government finally admitted that the Hungarian Revolution of 1956--so brutally crushed by Soviet tanks--was a legitimate demand for democracy and national independence, not a counter-revolutionary movement, as the authorities had claimed for 33 years. The bodies of the patriots of 1956 were exhumed from their paupers' graves, and reburied with pomp and ceremony as honored heroes.

In Czechoslovakia, the opposition leaders demanded and received an acknowledgement from the government that the Soviet invasion of 1968 was unjustified. Indeed, all the Warsaw Pact nations apologized.

In the Baltic Republics, the local leaders now demand that the Soviet government admit that Latvia, Lithuania, and Estonia were illegally annexed by the Soviet Union as part of the Nazi-Soviet pact. If ever the Soviet government does admit this, these countries will be on their way to national independence.

In China, the students didn't ask the government to rewrite history, but they did ask for a free press and for a measure of personal and political freedom. When the democracy movement was destroyed, the government immediately began the *Big Lie* campaign. According to the government, the democracy movement was nothing more than counter-revolutionary turmoil by hooligans and ruffians.

The young people of China can take heart from the events of this autumn in Eastern Europe. The old regime will fall; the dictators will be toppled and destroyed. The yearning for freedom and democracy and human rights cannot be eliminated. People can be jailed, but ideas cannot. This house of cards will also collapse.

What do our children understand about all this? Are they prepared to understand the great changes now convulsing the world? What should we do to ensure that they understand the principles and practices of democracy?

Tests and surveys and opinion polls reveal that Americans--young and old--are not well-informed about the democratic process, about the history of their society, or about the history of the world. Young people and adults know little about our heritage of rights and freedoms, and are woefully ignorant of the critical historical events that shaped the modern world. Our democratic system

depends on knowledge and participation, yet less than half of all registered voters participated in the last Presidential election.

Isn't it astounding? Hundreds of thousands, millions of East Europeans demonstrate for the right to vote in free elections; their leaders demand a multi-party system. Yet here wa are, with free elections and a multi-party system, and more than half of the population doesn't even bother to vote.

How long can we continue to enjoy the blessings of democracy when so many citizens don't know what it is and do not exercise the most fundamental responsibility of citizenship, that is, the choice of our leaders? This is the challenge not just for the schools, but for all of us, especially those in the media. But let me tell you how the schools are responding.

Four years ago, I began to participate in the reshaping of the California history-social science curriculum. I became a member of the state framework committee, a diverse group of teachers and scholars. It was adopted in 1987; implementation is underway.

The framework committee was well aware of data from the California Assessment Program which showed that the children of this state had a very shaky knowledge of history, geography, and world events. It knew too that national tests showed the same problems in other parts of the nation.

So, in rebuilding the history-social science curriculum, the first issue that the framework committee had to address was, what do children who will live in the 21st century need to know about the world and their own society?

Having asked this question, we then proceeded to consider how the changing demography of California affects what students need to know. The students in California's schools represent every ethnic group and nation in the world. What are the curricular consequences of this diversity?

Two weeks ago, I spoke to a meeting of the California School Boards Association, where a school board member said: *We have children from all over the world. They want to learn about their own cultural heritage, not about the Bill of Rights. What does the curriculum have to say to them?*

Well, the first thing it has to say to them is that wherever they have come from, wherever their parents have come from, they are now preparing to be American citizens. They will live and work and vote in this society after they finish school. They *must* learn about American history, the Declaration of Independence, the Constitution, and the Bill of Rights, because this is now part of *their* precious heritage as American citizens.

Thus, one of the goals of the new history-social science framework for K-12 is to identify and teach those core values that all Americans--regardless of their origins--have in common. What are those core values? Among them are tolerance for different points of view, good sportsmanship, fair play, due process, a sense of responsibility for the common man, and respect for the rights of minorities. These civic and democratic values provide the essential foundations of a political system that attracts refugees from all over the world.

These values, in turn, are imbedded in certain democratic ideas, such as the idea that the authority of the government derives from the consent of the governed; the belief that people have certain basic rights and freedoms that the government must respect--like freedom of speech, freedom of press, freedom of religion, freedom of assembly, the right to a fair trail, and the right to participate in the society's political processes.

The Constitution was not a perfect document, yet it embodies an understanding of human nature and of political institutions that has endured for more than 200 years. The founding fathers had the

profound understanding that the powers of government must be limited, because concentrations of power are always dangerous.

Our students should understand the rationale for the system of checks and balances that prevent the executive, the legislature, and the judiciary from exercising unlimited power over others. They should understand why it is important to have an independent judiciary and a free press. They need to know these things, not as items to be memorized for a test, but as institutions that allow freedom to prosper.

Nothing could be more important, in short, than for children from Asia, Latin America, Africa, and other regions to study the Constitution and the Bill of Rights, because it defines *their* rights and responsibilities as Americans.

The framework committee believed strongly that the history-social science curriculum in the past had been too diffuse. It has tried to be all things to all disciplines and it had lost its focus. This is why the new framework makes history and geography the center of the K-12 curriculum. These are the two great integrative disciplines of the social studies field: time and place, when and where.

One of the most striking features of the new curriculum is that it includes three years of world history instead of one. During these three years, children study the great civilizations of Africa, Asia, Latin America, the Near East, and Europe. Whatever their own racial or ethnic roots may be, they will encounter all of the world's great civilizations and learn about their history, geography, technology, economy, art, literature, and religion.

Children will also study a year of California history in grade 4, and three years of American history in grades 5, 8, and 11. In addition, children in the early grades, K-3, will encounter a curriculum that is enriched with historical biographies, legends, myths, and activities, in place of the current vapid curriculum of family, supermarket, and community helpers.

The object of this revision is to help children understand the connections between past and present; to learn how their lives have been influenced by people and events of long ago; and to develop in them the social intelligence to make sense of what is happening in the world around them.

If our children have no sense of history, they will live their lives as victims of collective amnesia, cut off from sources of change in the world, unaware of decisions and events that are shaping the future.

In the American history courses, the pluralistic nature of American culture is emphasized, both in the present and in the past. Students learn about the discrimination and prejudice that have stained American society in the past. And they learn about the historic struggle for justice and equality.

Some people today think that history can be used to teach children self-esteem; the idea is that if children see people of their own race or ethnic group achieving great thins, then they will think well of themselves. In a limited sense, this makes sense, since one can see in history that greatness has been attained by men and women of all races, religions, and group origins. But we should not look to history as a source of racial pride, for every race--*every race*--has committed terrible misdeeds, genocide, and atrocities at some time in the past. History's most consistent message, I believe, is that prejudice and discrimination are always wrong. People are people. All of us share common hopes and dreams for ourselves and our children.

As children study history in the new curriculum, they are encouraged to think about ethics and democratic values. In every society, people have ethical ideals of some kind, and students will learn how different religions and different cultures aspire to define what is right and what is wrong.

Now this is probably the most controversial aspect of the history-social science curriculum. The curriculum opposes moral and political relativism. It does not say: *Respect every culture no matter what.* It says: *It is appropriate to make critical judgments about every culture that you study, including the one you live in.* It is appropriate to ask, "How did the government get power? What rights did the citizens have? Did they practice slavery? How did they treat women and minorities? It is perfectly possible to appreciate a culture's art and architecture while maintaining a critical stance toward slavery and other violations of human rights, whether one is studying the United States in the 19th century or ancient Greece. This is the kind of tough, critical questioning that is essential for a thinking curriculum.

The framework also makes a point of teaching democratic values in every course. Children in the early grades learn to take turns and to listen to one another. They read stories about brave men and women who took risks to extend democracy and freedom. Throughout the curriculum, children learn that citizens have rights that their governments should respect, and that governments ought to derive their authority from the consent of the governed. They learn that dictatorial governments invariably abuse their power and their people.

Not everyone is comfortable with teaching democratic values as a universal aspiration. Last spring, I spoke to a conference sponsored by the National Governors Association and learned just how controversial the teaching of democratic values is.

Now, as it happens, many global studies programs try to avoid passing any negative judgments on any other culture. Children learn about another culture by studying its music, its art, and its literature; they sample its food, admire its architecture, and study its customs. But it is considered ethnocentric to ask rude questions about whether the people have any rights.

So, when I explained to the conference that California would be teaching democratic values as a standard of judgment by which to criticize ourselves and others, the reaction from the audience was immediate. Half a dozen speakers jumped to the microphone to argue that it was ethnocentric and chauvinistic to expect other people to care about or practice democracy. As best I could tell the basic argument was that democratic values and democratic institutions were desirable only to people who already have them.

This meeting, as it happened, occurred in mid-April, so I did not then have the example of the students in Beijing to support my position.

In reality, neutrality is difficult to achieve in the study of history. One must strive to be objective, but that is not the same as being neutral. For example, how can one teach the Holocaust without making judgments on the Nazis? How can one teach the history of the Soviet Union without speaking critically about the deaths of millions during Stalin's purges and show trials, the Ukrainian famine, and in the prison camps of the Gulag? It was not simply aberrant personal development that accounts for a Hitler and a Stalin, but aberrant political development that permitted the murder of millions of people.

Whether we teach children about Hitler or Stalin, Pol Pot or Idi Amin, or about slavery and prejudice in our own history, children must learn to make critical judgments on ethics and democratic values. They must learn that democratic institutions provide the best protection against abuses of human rights. They must learn about the long, difficult, painful struggle to establish democracy: in England, the United States, France, India, and in other nations throughout the world.

To know and appreciate a democratic society, they must also understand what it is like in undemocratic societies. They should learn what it means to live in a society where the government has all the power; where everything is owned by the government, including farms and factories,

restaurants and newspapers, publishing houses and neighborhood shops; where political dissent is forbidden and dangerous; where the government, the police, the judges, and everyone else are all members of the same political organization, dedicated to protecting the power of the state and the party; where one's house can be searched without a warrant; where religion is strictly controlled and regulated by the government.

They need only look at the contrast between West Germany and East Germany to see that an economy in which the government owns everything and decides everything destroys incentive and produces economic stagnation and dire consumer shortages.

If our children do not understand the differences, then they will not be prepared to improve their own society or to understand changes that are taking place in the world today.

When I speak of teaching democracy, I mean several things: First, students must understand the fundamental principles of democracy, like free elections, a multi-party system, a government with limited powers, a free press, legal protections for basic rights, and an independent judiciary.

Second, students must become knowledgeable about history, so that they comprehend the long, continuing fight to secure democracy and freedom in different parts of the world.

Third, our schools must prepare students to live and work in a democratic setting. In their school life, they must learn to have an opinion and to express it; they must learn to ask questions and to disagree amicably with others; they must learn to lead and to work with others; they must learn to participate in elections and to accept the results, whether their candidate wins or loses; they must learn to participate in student organizations where issues are openly debated and voted upon, and where students learn to listen to one another and to operate in a democratic context. They must learn how problems are solved in their own community and state--by becoming involved in issues that concern them.

In school, students learn not just what the academic curriculum teachers. They also learn the ethics of democracy, the give-and-take that is required in class discussion, in elections, and in the daily life of student organizations. Students learn to accept majority rule; they learn that if you win an election, you don't shoot the loser; they also learn that if you lose an election, you shake hands with the winner and hope for another chance to run again.

How important is it to teach democracy? *No less important*, I would argue, than teaching mathematics and science. Certainly our children need to improve their knowledge of mathematics and science if we are to maintain our standard of living in a competitive, technology-driven international economy.

But consider this: Children from Poland and Hungary outscored ours in a recent international assessment of science in 17 countries. Yet their economies are far, far behind ours. Without a democratic political system to encourage independence of mind, without free markets to encourage innovation and competition, their high scores in science and mathematics are not enough.

But how can we make our kids care about democracy when most of them have an easy life? They know that their lives will not change for the worse no matter who is elected. They worry about whether they have the money to buy the car or the stereo equipment of their choice. They have never had to worry about whether they will be allowed to vote or whether they will be arrested for their political opinions.

The challenge is not beyond our capacity. After all, you don't have to be a homeless person to care about the homeless; you don't have to suffer from lung ailments to care about air pollution; you don't have to be a direct victim of a catastrophe to understand what it meant to those who were.

Through debate and discussion, through the study of history, and through the vicarious adventures of literature, it is possible for young people to understand how precious democracy is and what life is like without it.

As the world grows ever more interdependent, the most compelling need of our times is to build institutions that curb violence, reduce ethnic and national tensions, and provide a peaceful means of resolving conflicts. One way to rein in aggression is by having a huge military presence, as the Soviet Union did in Eastern Europe during the past 45 years. The trouble with this approach is that when the policeman steps away, all the old rivalries resurface.

Another approach, and it seems infinitely preferable, is to develop durable democratic institutions, as Western Europe did after the Second World War. Because of the success of these democratic institutions, the level of cooperation in Western Europe has grown so great that war between any of its democracies today is literally unthinkable. When you consider how many times France, Germany, and England killed each other's young men in recent centuries, the advances of the past four decades must be recognized as truly momentous.

Our students can't know the history of every country, but they do need to know the important ideas and events that have shaped world history. And they should have a firm grounding in the meaning of democracy and in its importance to them as American citizens. It can be done. To do it well, we need a *good strong staff development program* to be sure that our teachers are well prepared; we need a *testing program that assesses understanding*, not just recall; and we need *materials* in the classroom that are more *lively*, more *immediate* than conventional textbooks (e.g., biographies, technology, and films).

Our students should know, as we do, that democracy doesn't solve all of our problems. But it does give us a fair and ethical process to work together to find solutions. Sometimes people get disgusted with democracy, because it seems slow and inefficient, what with having to listen to debate and disagreement. Sometimes people long for the strong man who will just get things done without all the talk and delay.

Yet for all its faults, a system of government that allows us to argue and to act, to debate and to decide, to differ and to unite, remains--as Lincoln said so magnificently--the last best hope of men on earth.

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