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ABSTRACT

In an effort to become more responsive to students' needs regarding the current and future labor market, California's City College of San Francisco (CCSF) developed "CityWorks," a strategic plan for workforce education and training. This report provides background to the development of CityWorks and describes key goals and strategies. Following a preface reviewing the college's Workforce Education Task Force responsible for the plan, part 1 discusses changes in the nature of work and related training needs that informed the plan's development. Part 2 profiles the San Francisco Bay area economy and workforce, while part 3 describes community colleges' experimentation with innovative learning methods, including active learning, learning with others, learning in context, learning how to learn, and learning with technology. Part 4 reviews CCSF's strengths and weaknesses related to workforce education, while part 5 describes the CityWorks model, focusing on the following four elements: consideration of special student populations and their needs; the implementation of career clusters at CCSF; the inclusion of school- and work-based learning activities, career decision-making and educational planning activities, and connecting activities between school and work; and the provision of support services. Finally, part 6 discusses the implementation of CityWorks, highlighting five goals and providing a table of strategies and actions related to each goal. Contains 61 references. Appendixes provide a description of workplace competencies, a table of assignments that integrate the competencies into the curriculum, CityWorks worksheets of learning activities, and a glossary of terms. (HAA)

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ED 401 983

CITYWORKS

A STRATEGIC PLANNING MODEL FOR WORKFORCE EDUCATION AND TRAINING

CITY COLLEGE OF SAN FRANCISCO

JC 970 019

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PREFACE

Fall of 1994 brought together a group of instructors, counselors, and administrators at City College of San Francisco to answer the question: how can the college become more responsive to the needs of students who seek an education that equips them for the present and future labor market? This group produced the concept paper, "Workforce Education and Training System," an initial vision for a comprehensive workforce education system at City College. The group continued to meet during the Spring 1995 semester, adding people to what eventually became known as the Workforce Education Task Force, a temporary subcommittee of the Master Plan Committee. Task Force efforts were enhanced by a generous grant from the Evelyn and Walter Haas Jr. Fund to facilitate the planning for workforce education. Two consultants were hired to assist the Task Force in its goal of developing a strategic plan.

In February of 1995, the Task Force approved the following mission statement:

> The mission of the Workforce Education Task Force is to develop a strategic plan to implement a comprehensive workforce educational delivery system that will provide the best long- and short-term learning opportunities for individuals seeking employment in the Bay Area region's workplaces. The plan will seek to respond to many of the recent organizational and technological changes in the workplace as well as some of the federal initiatives such as School-to-Work Transition, tech-prep, re-employment training, and the Goals 2000 skills standards projects.[1]

Building on the concepts presented in the initial paper, the Task Force then produced this current draft report, "CityWorks: A Strategic Planning Model for Workforce Education and Training." "CityWorks" is the name given to our proposed workforce program--a program that will have a multitude of projects. The "CityWorks" draft will be forwarded to the Master Plan Committee, the Chancellor, and the Provost simultaneously. It will be widely distributed and extensively reviewed during the Fall of 1995. After incorporating the results of this review, the report will be published for a wider audience.

The Task Force recognizes that its activities exist in a time of great change in the United States' economy and workforce and in formal education for careers. Many members of the group learned how community colleges are responding effectively to these changes at the second League for Innovation in the Community Colleges Workforce 2000 Conference in February. At the conference Dr. Winifred Warnat, Director of Vocational-Technical Education, United States Department of Education stated:

> Reform of vocational-technical education in the United States is well underway. The reform is taking a number of significant shifts in thinking and direction. There is a basic shift from vocational-technical education to education for work. There is a shift in approach from job preparation to career preparation and a shift in student choices from college or vocational track to college and career pathways. Other shifts include a focus from special populations to all students; from a separate vocational track to integration with regular education; and from an emphasis on secondary education to one on postsecondary.[2]

These shifts have already begun to affect City College. Now is an excellent time to prepare ourselves to meet the challenges brought on by these shifts. Our plans respond to the evolving economic environment, take into account new educational trends and research and build on the college's strengths. It is our hope that this suggested strategic plan leads us to implement the most effective ways to meet the needs of students preparing for the world of work.

I. Introduction: Changes in the Nature of Work

No matter where one looks today it is impossible to escape messages that the world of work is changing rapidly. Fortune magazine recently outlined six trends that will reshape the workplace:[3]

- The average company will become smaller, employing fewer people.
- Traditional hierarchical organizations will give way to a variety of organizational forms, the network of specialists foremost among these.
- Technicians, ranging from computer repairmen to radiation therapists, will replace manufacturing operatives as the worker elite.
- The vertical division of labor will be replaced by a horizontal division.
- The paradigm of doing business will shift from making a product to providing a service.
- Work itself will be redefined: constant learning, more higher-order thinking, less nine-to-five.

There are three additional trends to be considered in the context of workforce education:[4]

- Long-term employment is becoming less common.
- Small businesses will be providing more jobs in the future.
- Entrepreneurism is growing.

Meeting the needs of this altered work environment will be three types of workers:[5]

- **core workers** of a specific organization who are qualified professionals, technicians, and managers doing work essential to the organization.
- **contracted workers** from another organization who will perform the nonessential work of an organization.
- **flexible workers** who will do work part-time or temporarily for a company.

The flexible labor force is the fastest growing segment of the employment scene.[6] "Instead of one workforce, there are now three, with a different kind of commitment to the organization, a different contractual arrangement, *and* a different set of expectations."[7] These trends, along with rapid technological changes, have major implications for workforce training. People preparing for work in the next decade and beyond will need more complex skills, the flexibility to adapt and change, and perhaps most importantly, the willingness to continuously learn and improve.

Studies show employer dissatisfaction with workforce training.

Given the accelerated pace at which the U.S. economy has been tied to global markets, it becomes increasingly important for American competitiveness to improve our major strength — human resources. Yet, according to recent studies, a deep chasm exists between the skills and abilities that educational institutions provide and what employers want in workers. Many American employers describe serious problems in recruiting qualified candidates for even simple, entry-level jobs. A study conducted by the U.S. Departments of Education, Labor, and Commerce, reported that two-thirds of employers consulted assessed the pool of entry-level applicants as insufficiently prepared even in basic skills.[8] As the report points out, the challenge of improving workers' skills is particularly pressing in light of the limited number of new entrants to the workforce: nearly 80 percent of those who will be in the workforce in the year 2000 are already out of school and working.[9]

In another report released in February 1995 by the Census Bureau on Hiring, Training and Management Practices in American Business, employers report that one-fifth of U.S. workers are not fully proficient in their jobs. Furthermore, employers express a lack of confidence in the ability of schools and colleges to prepare young people for the workplace. Researchers concluded that the lack of confidence illustrates an alarming divide between the schools and the workplace despite national calls for closer cooperation to improve the nation's workforce and to improve the transition from school to work.[10]

Community colleges can play an important role in maintaining and improving the human resources of our country.

Community colleges, as well as high schools, are finding themselves at the forefront of a battle to institute reforms that better support learning and better prepare graduates to become self-sufficient contributors within "high-performance" work settings. Six million students are enrolled for credit in community colleges today, a 250 percent increase since the late 1960s, and an estimated five million more are taking noncredit coursework.[11] Community colleges have been preparing students for work since their inception, regardless of whether the student's immediate goal is to transfer to a senior institution or to immediately enter (or re-enter) the workforce. Community colleges can create new systems for responding to employer and worker needs.

In order to create a new system, partnerships must be formed with business and industry, with other education providers, and with community-based organizations. Furthermore,

given the rapid pace of change, it is imperative to strengthen institutional capacity in order to develop such a system and ensure that the system is sustainable.

Numerous examples exist of successful community college workforce preparation efforts. (See Chapter III.) These examples involve collaboration among educational institutions, private and public sector employers, and public and non-profit agencies. They also involve radical restructuring of curriculum and extensive work-based learning opportunities for students. Many feature certification for students in generic core competencies and industry-defined skills. Most have required major rethinking and restructuring of traditional curriculum models. In many cases, these examples represent the kinds of significant redesigning community colleges will need in order to meet the workforce preparation challenges our country faces.

II. San Francisco Bay Area Economic and Workforce Profile

San Francisco is a world-renowned international city, famous for its history, culture, and geographic setting. It is blessed with an extraordinarily diverse and entrepreneurial population, a unique climate, beautiful natural resources, and an unmatched location for serving the Pacific Rim. San Francisco, along with its neighboring counties, offer a vast array of industries.

Each San Francisco Bay Area county has economic specialties.

- Alameda, home to the region's busiest port, has the most diverse industrial base, including traditional manufacturing and food processing, biotech, and other high tech companies.
- Contra Costa has both a strong industrial base along the Bay shoreline and major suburban office parks housing insurance, real estate, and telecommunications businesses.
- Marin has one of the nation's highest concentrations of software firms.
- Napa's wineries and other attractions draw business and industry to modern corporate centers and industrial parks.
- San Francisco is a leading financial, administrative, and cultural center, a highly popular tourist destination, and a major international trade center.
- San Mateo, the location of many venture capital firms, has a diversified economy with strengths in biotechnology, communications, transportation, and finance.
- Santa Clara County is the world center of high technology development and home to San Jose--California's second largest city and an important business and financial center.
- Solano benefits from its location between San Francisco and Sacramento and is experiencing strong residential, office, and industrial development.
- Sonoma is a popular tourist destination and key producer of wine and agricultural products.

The economic outlook for San Francisco Bay Area is mixed.

Recently, California experienced one of its worst economic downturns since the Great Depression. Numerous forces caused widespread layoffs and restructuring within many established industries, as well as changes in new industries such as high technology manufacturing.

The Planning Department of the City and County of San Francisco, in the April 1995 Commerce and Industry Inventory, reports that San Francisco is moving slowly out of the recession.[12] It cites recent employment data that show signs of economic recovery both regionally and in San Francisco.

Reports from the Employment Development Department (EDD), the Association of Bay Area Governments (ABAG), and the Center for the Continuing Study of the California Economy (CCSCE) also describe the economic recession of recent years. CCSCE predicts a recovery for a variety of economic sectors. However, the wealth generated should not be confused with job growth. For example, they predict continued growth in high tech areas as well as for export businesses, but this growth is vulnerable to what they call the "jobs-output paradox:" job losses occur despite record sales and profits. The export business, in fact, is expected to lose overall jobs.

ABAG concurs with this assessment in its 1994 projections.[13] For the period 1993 to 1996, ABAG projects a real increase in gross exports from these sectors at 6.8 percent annually. Employment growth, however, should only average one percent annually over the same period. This suggests that output gains will not be translated into employment demand.

Particular industries will do better than others.

In California, two sectors of the economy—services and retail trade—will account for over half of the job growth through 1998.[14] Within the services division, health and human services as well as business services will account for over half of the growth. Many of these high skilled jobs are in the technician category. According to the Bureau of Labor Statistics, the top three growth jobs in technical occupations are Paralegals (86 percent), Radiologic Technicians (63 percent), and Medical Records Technicians (61 percent).[15] Furthermore, according to Richman, job growth for technicians will "far outpace that for other workers over the coming decade".[16] While many of these technician level jobs require bachelor's degrees, there are many that do not. With these positions the associate degree enables students to gain entry into jobs without cutting off the opportunity to eventually transfer and complete a bachelor's degree.

The EDD expects San Francisco County to grow by about 8,900 jobs during the 1992-97 period.[17]

- Services and retail trade will account for all the payroll gains during this period.

- All other industry divisions are expected to lose jobs.

More than one-third of San Francisco jobs are in services. Service employment in the region increased by 5,000 jobs to a total of 835,000 in 1993. In the service industries, business, engineering, accounting, research, health, and legal services are the largest categories.

In the next few years, substantial payroll gains are expected particularly in temporary help agencies, building maintenance, advertising agencies, and private safety services. Legal services will also grow significantly. Government, however, who employs close to half the number of people in services, is expected to lose positions continuously through 1997. Defense cutbacks and the recent opening of a federal building in Oakland account for much of this job loss in San Francisco.

At 13.8 percent, employment in retail trade is another important area for San Francisco. The largest employment gains in retail trade are expected in food stores, restaurants, and apparel stores. Retail trade should show a 3.3 percent gain.

A major contributor to the San Francisco economy is the hospitality industry. More than 13 million people visit San Francisco each year, making tourism San Francisco's number one industry. Tourism generates big dollars: visitors spend nearly $4 billion annually, boosting the local economy and providing a continuous flow of income for the business sector. Visitor spending totals more than $216 million of city revenues annually. It is estimated that over 66,000 jobs are directly supported by visitor spending in San Francisco, with a payroll in excess of $1 billion. Nearly half of these employees are ethnic minorities and more than 60 percent reside within San Francisco. When adding in the jobs generated by those businesses supplying the visitor industry, the employment impact is nearly doubled.

San Francisco is also a popular convention and meeting destination, adding to the impact of the overall hospitality industry. The city hosts over 200 trade shows and conventions annually, with the top 25 drawing more than 300,000 visitors. The newly opened Yerba Buena Gardens Cultural Center, featuring museums, galleries, theaters, and a dance studio, is expected to draw tens of thousands of tourists and shoppers to the area around the Moscone Center.

Other sectors are projected to **lose** jobs. Finance, insurance, and real estate jobs. made up 13 % of San Francisco's jobs in 1990. Restructuring and relocation of banks and savings and loan organizations will contribute to a projected loss of 4,200 of 75,800 in this sector by 1997.

The smaller sectors of the job market—manufacturing (6.8 percent), transportation and public utilities (6.7 percent), wholesale trade (5.2 percent) and mining and construction (2.7 percent) are **expected to reduce overall employment.** Employment in durable goods manufacturing--metals, transportation equipment, etc.—is expected to fall 16.7 percent, which is much more than in non-durable goods, which will lose 3.1 percent of its workforce by 1997.

Bay Area employers have a broad range of sizes.

A number of large renowned employers have their corporate headquarters in San Francisco including Bank of America, Bechtel, Chevron, Levi Strauss, Pacific Gas and Electric, Pacific Telesis, and Wells Fargo.[18] The City is also a hub of West Coast finance and home to the district Federal Reserve Bank and the Federal Home Loan Bank, the headquarters of the California State Banking Department and the Pacific Stock Exchange.[19] Yet, only 82 firms, or one-fourth of one percent of all San Francisco firms, has 500 workers or more.[20]

Approximately 77 percent of the more than 62,000 firms in San Francisco and Northern San Mateo County have fewer than five employees.[21] In San Francisco, more than half (17,047 of 32,149) of the business establishments have 14 workers or less. Small business services have replaced traditional corporate in-house functions in recent years, according to the recent City and County of San Francisco update.

The next decade's workforce will differ from today's workers.

During the late 1980s, the U.S. Department of Labor sponsored a well-known report, *Workforce 2000: Work and Workers for the 21st Century.* This influential project highlighted five key demographic facts:[22]

- The population will grow more slowly and the workforce will decrease this decade.
- The average age of workers will rise, while the pool of young workers will shrink.
- A larger proportion of women will enter the workforce.
- Minorities will represent a larger proportion of entry-level workers.

- Both the population and the workforce of the United States will include a higher percentage of immigrants than at any time since World War I.

In fact, people of color, women and immigrants will make up nearly 85 percent of the net new additions to the workforce by the year 2000.[23] Over the coming decade, the number of workers ages 25 to 34 will decrease by 2.9 million men and by nearly a million women, drops of 15 percent and 6 percent respectively.[24]

This section presented an economic description for the San Francisco Bay Area. Overall, analysts are optimistic about the economy, focusing on a few key sectors. **Health and human services, tourism and hospitality, emerging technologies such as those related to the biotech industry, and service industries in general look particularly promising in the years ahead.** This section provided external economic analysis to add to the context from which to create a strategic plan for workforce education. The next section looks at new paradigms of teaching and learning considered in developing the plan.

III. LEARNING FOR THE 21ST CENTURY

Community Colleges are experimenting with new ways of learning.
At Shoreline Community College in Seattle, groups of 40 students and two teachers are organized into learning communities linking career preparation and English composition. People who want jobs as computer specialists are learning how to write clear memos and technical documentation. In Colorado, medical technicians in training at the Phillips Center of the Community College of Denver are in class six-hours a day, five days a week and must complete a 225-hour internship. Students can begin any Monday, and the center is only closed on eighteen holidays a year. In North Central Illinois, Rockford area manufacturers have created an apprenticeship program that links high school courses, adult apprenticeships, and the associate degree program at Rock Valley College. The high school courses are taught at a factory, juniors and seniors get paid for work experience, and scholarships toward college fees are awarded based on first year grades. At the College of Marin in Northern California, students in the multimedia A.S. degree program get experience in the on-campus Digital Village, working with professional videographers, photographers, digital audio technicians, animators, and other specialists in "virtual studios."

Experiments exist here at City College as well. Industry scientists teach laboratory sections in biotechnology. They informally interact with students creating more of a company atmosphere than a formal teacher-student relationship. Engineering will offer evening modules in welding, total quality management, and machine shop. Normally taught as eighteen week courses, each course will be broken down into sections covering particular aspects of a course. This shortened form will give students scheduling flexibility and accommodate students who only need updates in specific areas. Internships. A Title III grant will provide funds for instructors to learn multi-media techniques and incorporate them into their classes.

These examples represent ways of learning beyond what Terry O'Banion calls the "time-bound, place-bound, efficiency-bound, and teacher-bound" learning arrangements common in community colleges today.[25] They also reflect recent research on learning and the diversity of students community colleges serve. They illustrate five concepts which are central to rethinking community college learning: active learning, learning with others, learning in context, learning how to learn, and learning with technology.

Active Learning

Active learning approaches—which are often called "student-centered learning", "hands-on learning," and "collaborative learning"—grow out of a long tradition, going back in this country at least to John Dewey. Modern research now shows that learning is a process of construction of skills, ideas, and concepts rather than a process of absorption of information. Students graft new knowledge onto what they already know and consolidate and revise it by testing how well it works in the environment.

Traditional teacher-centered experiences express what some experts have called the "banking model of education—in which the teacher's role is to fill the student's head by making deposits of information which the teacher considers to constitute true knowledge and the student's job is merely to store the deposits."[26] Active, collaborative learning, in contrast, supports "constructed knowledge," knowledge that integrates personal experience with information received from others. Students who can construct knowledge can continue to learn and adapt as their workplaces and their lives change and challenge them in unexpected ways.

Optimal learning environments should be very rich in opportunities to try things out and get feedback. Students almost always learn best by solving open-ended problems. Teachers who want to maximize genuine learning will enrich their classrooms and laboratories with as much hands-on materials as possible, and will also enable students to test their new knowledge in a wide variety of real world settings including workplaces.

Learning with Others

Learning is very largely a social process. Students can almost always accomplish more working with capable peers or teachers than they can alone. Dialogue and discussion provide students with a forum that requires clear expression of concepts. This forces students to reflect on the ideas and skills they are learning. Conversely, students can extend their thinking by critiquing the ideas of others in dialogue with them.[27] Studies also show that intellectual and social connections with other students and faculty members are important to students persistence and success in college. The effectiveness of mentoring and apprenticeships with motivated crafts people may also reflect the social nature of most learning. Particularly effective social learning situations are fostered by learning communities. These are curricular structures that link courses in different disciplines around a common theme or question, serving students who stay together with a team of instructors for periods of time up to an academic year. They give students a

deeper understanding and integration of the material they are learning and interaction with one another and their teachers as colleagues in learning. Collaborative learning and various real world experiences are common features of learning communities.[28]

Learning communities have much promise for workforce education. In fact, informal learning communities already are common in "vocational education," and may be one secret to the success of many programs at City College and at other community colleges. Programs in which a cohort of students take the same courses every term, and work with each other and a small faculty over several years, often have many characteristics of learning communities. Linking programs with classes that can provide students with additional skills needed for the workplace, such as labor studies or communications courses, could further strengthen these workforce education efforts.

Learning in Context

Research shows that prior knowledge and frameworks are needed for people who are constructing new knowledge. Isolated facts and skills—presented abstractly, without any context or reference points—are very hard to learn. This fact explains the importance of work-based learning to workforce education. Work-based learning—on campus and in the community—provides a rich context for new learning.

Techniques for work-based learning on campus can include school-based businesses, workshops, and laboratories in which students log their time and are evaluated on their products, employer representatives conducting practice interviews for job-seeking students, guest speakers who demonstrate their products and describe their companies, and many other simulated real-world situations.

City College is uniquely positioned to provide learning at community and work sites. It has campuses throughout one of the most extraordinarily rich and complex cities in the world. It also has many existing partnerships with small and large businesses, schools and other colleges, community-based organizations, labor unions, and federal, state, and local government agencies. Relatively few students, however, are able to access the rich resources surrounding the college.

Site visits, paid and unpaid internships, job shadowing, offering classes at company and community locations, and linking the employment most students have already with college curricula are all ways to help students learn in settings off-campus. City College currently

has some model programs offering these kinds of learning experiences, and growing expertise in locating opportunities, linking them to school-based learning, and supporting them with liability insurance, school staff liaisons, and other services.

Learning How to Learn

Employers repeatedly encourage educators to help students to "learn how to learn." Today's workplaces require people who can continuously learn new ways of serving customers, new technologies, and new ways of doing business. Self-directed students become workers who can monitor their learning efforts, and change paths if a current approach is not working.

Research shows that teachers can help students learn how to monitor and evaluate their own learning efforts by giving them explicit explanations and modeling particular tasks. Rather than teaching one right way to do things, teachers can give students helpful concepts and terms for thinking about learning, so that they can figure out new ways of doing things. Faculty also need to demonstrate and discuss their own problem-solving processes, so that students see that results do not appear magically, but evolve from processes in which they can become skilled.[29]

Information about students' own learning styles and a model of experiential learning which stresses moving from concrete experience through reflection is useful. This learning process involves conceptualizing abstractly from experiences and reflections (some old, some new) and then experimenting with newly formed theories by putting them to the test of additional experiences and further reflection. Students feel successful as they repeat this learning cycle over and over, and have repeated opportunities to learn in ways which fit their personal learning style.[30]

Learning with Technology

New stories abound in the popular press about how computers, multimedia, net surfing, virtual reality and other new technologies will transform education in the United States. Multimedia systems can give students more control over their own learning, and when used with groups provide very rich, multisensory experiences. Interactive distance learning enables students to learn at their homes and worksites, individually or in groups, from expert teachers. Computer simulations and robots give students a feel for state-of-the-art equipment. Virtual tours of factories of the future and highly-specialized "clean rooms" will give students important experiences they could never get in real life. Students

from around the world can compare their designs for new tools, share recipes and cooking techniques, or research data on the latest drugs via the Internet.

Workforce education is likely to be transformed by technology, just as many global workplaces have been, in ways that are very hard to predict. However, it clearly has ever-increasing potential for facilitating active, social learning, and for giving students constant, objective information on their learning processes and progress.

In sum, community college faculty have always been concerned with how best to help students learn, and many are experts in student learning as well as experts in their disciplines and fields. Growing numbers are aware of the new research on learning, but most have been taught to think of learning as the transmission of facts rather than the construction of knowledge. With help in functioning as coaches, facilitators, and designers of learning, City College faculty will be able to help students dramatically improve their success in the workforce and in life generally.

IV. CITY COLLEGE STRENGTHS AND WEAKNESSES IN WORKFORCE EDUCATION

If the ultimate goal of workforce education is to prepare students in the best way possible for the work place, then we must assess what already works well at the college, what needs improvement, and how we can use our strengths to enhance the areas found deficient. The identification of our strengths and weaknesses provides direction for workforce education planning.

Strengths

City College has many strengths to build on for workforce education:

1. City College offers a wide choice of courses and programs.
2. The majority of faculty stay current in their field of knowledge.
3. The heterogeneous student body supplies special resources.
4. CCSF provides education for a regional labor force.

1. City College offers a wide choice of courses and programs.

- Approximately 4400 sections are taught by approximately 1800 faculty each term (68 percent credit courses and 32 percent non-credit courses).
- Associate of Arts degrees are awarded in seven programs and Associate of Science degrees in 20 programs.
- Vocational and occupational programs offer 53 Awards of Achievement and 80 Certificates of Completion.
- Twenty-three programs are offered in Health Careers, 45 in Technology/Trade & Industry, four programs in Service Occupations, and 16 programs in Business careers.
- Faculty teach more than 700 ESL credit and non-credit classes.
- Contract Education provides specially tailored courses to more than 30 non-profits and businesses.

City College courses and programs run from highly structured academic preparation for four-year colleges to flexible, non-credit courses easily adapted for changing audiences and open enrollment times. Our non-credit division and contract education move quickly to incorporate cutting-edge materials, content, and teaching techniques. We have the potential to bring academic skills to vocational education classes and bring the working world to our academic classes.

Our variety of programs gives us the potential to create a vast assortment of workforce education programs. The many choices attract a wide assortment of students with varying capabilities--all of which can make for robust programs.

2. The majority of faculty stay current in their field of knowledge.

- According to the accreditation team report, CCSF's faculty are well trained and educated in the content areas they teach.
- Faculty are very involved in the practice of their discipline; many belong to national professional organizations and win awards for their work.

With an excellent teaching staff, students are exposed to accurate and useful information. One indication that students are provided a good academic base is our better-than-average transfer rate (26.35% as compared with 19% at other California Community Colleges). CCSF educates significant numbers of transfer students in the sciences, behavioral sciences, and liberal arts.

The knowledge and experience of our faculty is the basic resource we must rely on to build our workforce education successes. They are the ones who will make adaptations, work collaboratively, and carry out strategies proposed in this document.

3. The heterogeneous student body supplies special resources.

- percent of our students describe themselves as Hispanic, African American, Filipino, Asian, Native American, and small populations of groups not specifically identified.
- of our students indicate that the primary language spoken at home is not English thus many students communicate in more than one language.
- Only 33% of our students were between the ages of 20 to 24 in Fall, 1993 credit programs, while 53% (14,702 students) were 25 years old and up.
- Students come with a variety of goals in mind, from getting a two-year degree to generally broadening their background; however, the bulk of students come either to transfer to a four-year institution or to improve their opportunity to work.

The diversity of students at CCSF has brought an extraordinary tapestry of cultures to campus providing enrichment opportunities for all students and staff. Among other things, our culturally diverse students have enlarged our perspectives, brought us new arts, and expanded our curriculum. For example, we have instituted American Studies courses that

explore the historical, literary, artistic, and social movements of various ethnic groups in America. CCSF values this diversity and has stressed its importance in our mission.

California and San Francisco, in particular, have large immigrant populations. Exposure to many cultures makes our students sensitive to others and more capable of working in today's multi-cultural settings. Those students with second language skills are especially in demand.

4. CCSF provides education for a regional labor force.

- One out of every 10 San Franciscans takes a class at City College each term.
- More than 15% of CCSF's students come from four different counties adjacent to San Francisco County.
- City College provides training for businesses and agencies with contract education courses.
- CCSF has established a number of working partnerships with other educational institutions, community based organizations, and private businesses.
- Partnerships throughout the Bay Area provide real-world experience for students, supply mentors to students, and provide opportunities for students seeking jobs.

CCSF has educated and trained hundreds of thousands of residents in the Bay Area and is critical to the Bay Area workforce. We have trained, re-trained, and updated workers for large numbers of employers. We have established connections that are evolving into formal partnerships benefiting students, the college, and the private sector.

We have a Career Development and Placement Center which helps match students with employers, and a new Transition to Career Center, which will arrange work-site educational experiences for students. CCSF also has grants for four Ed>Net economic development and workforce education projects: Advanced Transportation Technologies, Biotechnology, Environmental Technology, and Workplace Literacy. We have received funds to start a Small Business Development Center through our School of Business.

These relationships with people and organizations can be used as a scaffolding for better and stronger partnerships in the future. Partnerships, which are key in a workforce plan, provide learning opportunities for faculty and students and create a dialog that keeps the college in tune with the needs of employers. When our students succeed in their jobs, they

help maintain an enduring partnership between the college and employers as well as contribute to their own economic well-being and the general strength of the economy.

Weaknesses

While CCSF enjoys many strengths, there are challenges we must meet in order to develop a comprehensive workforce plan. CCSF's main weaknesses affecting a workforce plan are as follows:

1. Current programs are not sufficiently flexible to meet student needs.
2. No systematic mechanism exists for creating and sustaining partnerships with the Bay Area community.
3. Curriculum is not integrated with the world of work.
4. National, state, and local skill standards are not recognized nor routinely incorporated into curriculum.
5. Internal coordination for implementing a workforce plan is lacking.

1. Current programs are not sufficiently flexible to meet student needs.

The evolving nature of the workforce requires an educational institution to recognize changes and adapt quickly. This is a challenge for any educational institution and CCSF is no different. Curriculum must change with new technologies. Additionally, at CCSF there is a lag time between curriculum development and delivery. Scheduling and pinpointing a location to hold classes typically create a delay in service. Rigid bureaucratic procedures in hiring and accounting are a problem.

Potential partners express concern about our ability to be flexible. How easily can we adapt our curriculum? What kind of rigidity in staffing must partners live with? Even other educational institutions have expressed concern with our lack of internal capacity to coordinate programs. How does our bureaucracy prevent us from responding quickly to initiatives? Can we incorporate new modes of delivery using computers, extra-classroom activities, distance learning, and modular scheduling?

Little of this was considered in the past because there was no need to make changes. City College must now learn to respond quickly while maintaining standards. We must be creative about working with our bureaucracy, and we must be open to perspectives that counter our long-held traditions.

2. **No systematic mechanism exists for creating and sustaining partnerships with the Bay Area community.**

Some excellent partnerships exist at City College. These partnerships have evolved through the hard work of individual, dedicated faculty and administrators who saw opportunities and were able to create mutually beneficial relationships. However, there are reasons why partnerships have been limited. First, there is no strong, nor historic, tradition of forming partnerships. Second, even when faculty possess the desire or recognize an opportunity, the institution has not provided resources that would help bring people together. Forming partnerships is a time-consuming, evolutionary process--you must take time to get acquainted, and see if you have the elements that allow for an effective partnership.

Third, community based organizations have reasons why they are hesitant to become involved with City College. These center on three concerns: access, cost, and flexibility. City College is a big place, and it's not obvious how to enter into relationships. One outside agency said they had thought about making connections for a number of years but felt daunted by the size. The director wasn't sure who to call or how to get started. When City College approached them, they were delighted to respond. CCSF must take the initiative more often and project an open, available, and welcoming attitude.

Cost of services are naturally a concern to everyone. Costs are not restricted to paying money to City College for a service. They also include the cost of providing staff time and energy. Community based organizations with limited budgets have to chose carefully where they focus their effort. Corporations typically feel that an activity must ultimately contribute to their bottom line.

Finally, the creation of partnerships has been piecemeal at City College. Some departments and programs have made this a priority and have had dedicated faculty developing relationships. Other departments have not had the interest or have not had willing recruiters with sufficient time and energy to pursue these ventures. In some cases sought-after partnerships have run into problems preventing them from developing as they should. Given our broad reach into the community and our capacity to deliver education and training in a wide range of subjects, we should be able to create, nurture, and sustain partnerships. To make this happen, however, we must recognize the value of partnerships, develop an action plan for creating and sustaining them, and provide the appropriate resources to carry out our plan.

3. Curriculum is not integrated with the world of work.

One of the hallmarks of an effective workforce education is that the world of work is infused into both academic and vocational courses. While no extensive survey has assessed how much of this really takes place at CCSF, a sampling of programs found that some faculty have managed to create this type of integration. However, the vast majority, like faculty at most higher education institutions, have not.

A number of our vocational courses have not included sufficient academic material. This leaves vocational students without skills that help them adapt to other careers or to continue their education should they desire. Students who learn best in an applied setting can greatly benefit from an integration of English, writing, and math skills into vocational courses. Further, academic courses have not traditionally stressed connections to the world of work. When we relate what we are teaching in academic classes to careers, students can better understand how to use the knowledge they are learning and often retain more through attaching the learning to a context. Some academic subjects may benefit from placing them in an applied setting--English communication, applied physics, hands-on science. This type of integration can be found in a number of CCSF programs but expansion of this type of learning is highly recommended.

Another opportunity we have at City College is to integrate classroom based work with work-based instruction. How can we use our students' work situation as a learning situation? With close to 57% of our students in regular full- and part-time jobs and an additional number of students participating in internships, we have the potential for substantial work-based instruction.

Last of all, our department structure tends to isolate disciplines rather than bring them together and there is often a large distance between traditionally academic classes and traditionally vocational classes. This isolation, which exists at most higher education institutions, does not reflect the real world where disciplines are integrated and workers must bring together a wide range of skills and knowledge.

4. National, state, and local skill standards are not recognized nor routinely incorporated into curriculum.

In 1990, the U. S. Departments of Education and Labor instituted a series of projects in order to develop a national system of skill standards. While the idea of skill standards has existed in a number of career areas (e.g. construction, real estate), little has been done to

achieve a coherent national system. Additionally, most of the skill standards that do exist have not had formal links to secondary and postsecondary education.

Since technology has been changing so rapidly, job skills are becoming more complex. In addition to technical skills, workers need to be able to think creatively, solve problems, and maintain good interpersonal skills. Those in the corporate sector have expressed concern about the lack of linkage of skill standards with the educational needs of employers. It has become increasingly more important to have industry talking with educational institutions. To this end, the SCANS Commission (The Secretary's Commission on Achieving Necessary Skills), has brought people from various industries together with educators to identify skills students should have in each field. (See Appendix, pages 65-70.) This comprehensive setting of standards and competencies should bring a better linkage between educational institutions and labor market needs. Students will enter the market with appropriate skills, and employers will be assured of having an adequately trained workforce.

These skill standards have now been established for some subjects taught at City College, however, very few faculty are aware of these or have begun to use them as part of their teaching and evaluation. CCSF faculty can take an active role by joining committees and becoming part of the process to develop standards. We need to make faculty aware of the standards and to provide workshops on how to incorporate these standards into their coursework. (See Appendix, pages 71-72 for examples of teaching SCANS competencies.) A mechanism to routinely incorporate skill standards should be established.

5. Internal coordination for implementing a workforce plan is lacking.

The evaluation of CCSF's strengths and weaknesses is not an easy task because the college is large, diverse, and decentralized. While assessment is challenging, implementation of general plans that affect all campuses may not even be possible without some type of permanent, internal, cross-institutional structure to ensure that a comprehensive workforce education plan is implemented.

Right now, responsibilities are unevenly disbursed throughout the college without any central office or individual taking charge. Programs are created in various pockets around the college without others benefiting from the knowledge of their successes and failures.

Communication, which is a cornerstone of successful workforce education, is limited and sporadic and until now has not been fostered.

To effectively implement a workforce education program, a flexible and coordinated structure is needed for making changes in the curriculum, for developing partnerships, and for enhancing faculty and staff development. The structure should have the capacity to experiment, pilot programs, and evaluate its efforts. It also needs to be a repository of information and the central communicator of what is learned.

V. CITYWORKS: A STRATEGIC MODEL FOR EXCELLENCE IN WORKFORCE EDUCATION AND TRAINING

Thus far we have considered the economic forecasts for the Bay Area, recommendations coming from current research, and City College's strengths and weaknesses. Before presenting our plan, there are four elements that must be identified:

- Student populations and their needs.
- Career clusters at CCSF.
- Program elements needed.
- Support systems and capacities needed.

These four items are then integrated into a comprehensive model for workforce education which draws on the information presented throughout this report.

STUDENT POPULATIONS

It is essential to take student diversity into consideration when formulating a conceptual model. Age, ethnicity, and reasons for attending the college create different needs for students. Because students come to City College at various times in their lives with a variety of characteristics and requirements, we must offer different educational responses to fit their needs. Five categories of students have been identified which can help us craft our programs:[31]

1. *Students Preparing for College Level Education.* These students are significantly underprepared academically, and are in need of extensive help with basic skills and many support services. They may or may not be associated with programs targeting underserved populations, such as JTPA, GAIN, or GATES.

2. *Recent High School Graduates.* These students, who have completed high school in the last five years or so, are the emerging workers of tomorrow. They often enroll at City College seeking a degree or certificate to prepare to enter the workforce or to continue their education. These students tend to have fewer work experiences, and may be unclear about their education goals.

3. *Students Seeking Retraining.* These students attend City College in search of retraining skills to re-enter the workforce, often in industries quite different from their previous experience. Displaced workers as well as young adults making the transition

from a "job" to a "career" are in this group. These students may have considerable work experience that can be valuable as they pursue further education.

4. *Students Seeking Upgrading.* These students are primarily incumbent workers in search of upgrading certain skills in order to change jobs or to advance in current positions. They often move in and out of college courses and programs as their career needs change.

5. *Entrepreneurial Students.* These students often enroll in courses and use services to advance their self-employment, small business and professional pursuits. They seek customized education to meet their specific educational and career goals.

These different types of students have implications for each program element in the framework. For example, work-based learning activities for entrepreneurial students may be quite different for students recently out of high school who have had very little work experience. Similarly, students who have worked to improve their spoken and written English skills will be more successful in college and in finding and keeping work than counterparts who have not mastered basic English skills. These categories help us to focus on students as learners and remember that there is no one way to educate all people for careers.

CAREER CLUSTERS

Career clusters are groups of related workforce education programs which require common foundation skills and core competencies. They are an important feature of current efforts to reform workforce education in schools and colleges because they address the fact that industries and careers are rapidly changing and that students often know little about career options or how their interests and skills match different careers. As students master the core competencies in a cluster, they learn about their capabilities and about various occupations in the cluster. As they move close to entering (or re-entering) the work force, they can concentrate on the specific skills needed for jobs which are available. As industries change, grounding in a career cluster enables workers to adapt.

Career clusters have been created in two ways—by skill sets and by economic sectors. For example, computer application skills are used in almost every industry. Other skills which are found in many sectors of the economy are accounting, writing, public speaking, and some kinds of research and analytical skills. The Task Force recognized the

attractiveness of many skills to employers but decided to organize clusters primarily by economic sector. People who are knowledgeable about a broad field such as Health Sciences, as well as educated in a specific certificate or degree program like nursing or radiation technology, can handle the rapid changes medical careers are undergoing. It should be relatively easy for them to add additional credentials as needed.

While the Task Force does not wish to dictate how clusters will be created in the context of existing City College campuses, schools and departments, we did want to identify clusters that could be used in pilot programs. Clusters bring together groups of faculty from different areas to work on core competencies and program congruence at the same time as their current school and department relationships are maintained.

We attempted to define each cluster area using both external analyses as well as internal assessment. In choosing which clusters to begin the pilot projects, the Task Force considered the following criteria:

- Labor market information and economic analysis.
- Population of students served, based on the five types of students.
- Industry skill standards as well as performance-based assessment.
- Capacity of existing departments and schools to organize into clusters.
- Capacity for partnerships with industry, other education providers, and community-based organizations.
- Existing and potential activities which support connections between the college and employers.
- Curriculum redesign issues raised by the Learning Activities Model.
- External and internal funding potential.

Five economic sector clusters at City College were identified. A sixth cluster, Emerging Sciences, Arts and Technologies, was created recognizing that some emerging careers cross existing disciplines or involve skills for which the college is not currently prepared. This unit may be an incubator for programs which will eventually become part of other clusters.

The six clusters we considered for pilot projects were:

- Health Science and Human Services
- Hospitality and Tourism
- Banking and Finance

- Transportation
- Communication Arts
- Emerging Sciences, Arts and Technologies

Based on the criteria mentioned above the Task Force recommended two clusters for piloting the first programs--"Health Science and Human Services" and "Hospitality and Tourism." The next one will be "Emerging Technologies and Communication Arts." In future years, pilot projects will be developed in "Transportation" and "Banking and Finance" as well as in clusters which have not yet been identified.

PROGRAM ELEMENTS

The School to Work Opportunities Act of 1994 states that three types of activities must be included in a comprehensive workforce education program: school based, work-based, and connecting activities (connecting activities are ones that that link employers with the college and other workforce education partners). The Task force has incorporated these elements into their planning but has changed the structure to better fit our planning model. Program elements are restructured as:

- Learning Activities
- Career Decision-Making and Educational Planning Activities
- Connecting Activities

1. Learning Activities

The School to Work Opportunities Act of 1994 describes two types of learning activities: school-based and work-based.

School-based learning includes:

- Career awareness and career exploration.
- Selection of a career major.
- Rigorous program of study made up of academic standards consistent with Goals 2000 standards.
- Instruction that integrates academic and vocational learning via applied and contextual teaching methodologies (Applied Academics).
- Regularly scheduled evaluations to benchmark and monitor student progress.
- Procedures that facilitate entry of participating students into additional training.

Work-based learning includes:

- Work experience, job shadowing, school-sponsored enterprises, or on-the-job training.
- Planned program of job training and work experiences coordinated with school-based component and related to student's career major.
- Workplace mentoring.
- Instruction in general workplace competencies—positive work attitudes, employability, and participative skills.
- Broad instruction in all aspects of the industry.

Both types of learning experiences are critical for students preparing for the world of work, and the most effective curricula will include both. It is important to note, however, that school-based and work-based experiences are not defined by *where* they take place, but rather by the *substance* of the learning activity. The notion that work-based learning takes place only at an employer site, and school-based learning is restricted to campus is obsolete. Both types involve learning that can happen on campus as well as off. For example, distance learning provides learning opportunities at workplaces and homes. Industry personnel sometimes teach classes on campus.

It is also useful to think about two types of work-based learning: school *for* work and school *and* work. School-for-work programs are education and training programs which have preparation for work as their major purpose, and work follows schooling. These work-based programs typically occur on campus. School-*and*-work programs, such as youth apprenticeships, school-based enterprises, cooperative education, and some Tech Prep programs, combine school and work programs at the same time. These work-based programs typically have some of their learning take place off-campus where employers provide paid and unpaid internships and work experience.

The need to integrate work related and academic education in high schools and community colleges is very serious and well documented.[32] Work-based learning must be an integral part of a program's curriculum. Exposure to workplace experiences in conjunction with school-based learning prepares students more thoroughly for entering or re-entering the workforce. According to a recent Educational Quality of the Workforce (EQW) Issues editorial, completion of schooling is no longer adequate training for entry level workers: "Young people are now faced with a challenge to find the mix of education and on-the-job training that will qualify them for new jobs."[33]

City College currently offers many work-based learning opportunities. A limited survey conducted for the Task Force identified 25 programs at CCSF which include some form of work-based learning, such as work-based units in their curriculum and formal and informal internships. However, only a small number of students are served by these existing efforts and we believe that many more students would benefit from greatly expanded work-based learning activities.[34]

To accomplish this, City College curricula can be redesigned to offer work-based and school-based learning for three levels of skills (illustrated in Figure 1 on page 28):

- Foundation skills
- Core competency skills within a cluster
- Program-specific skills

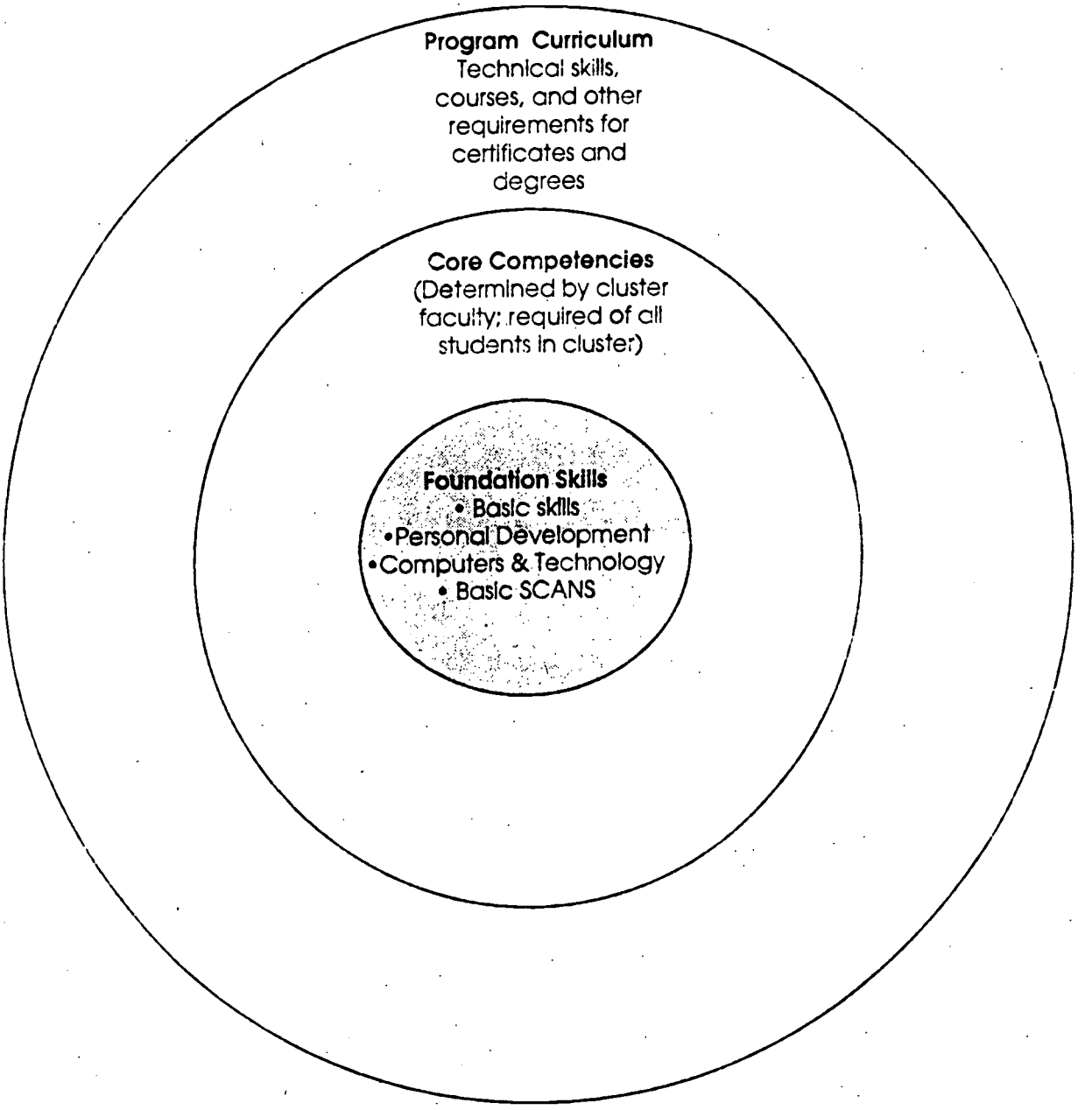
Foundation Skills (inner circle on Figure 1) include basic reading, writing, and computation skills; basic familiarity with computers and technology; personal development competencies such as study skills and time management; and the first level of skills and abilities as identified in the Secretary's Commission on Achieving Necessary Skills (SCANS) report (See Appendix, pages 65-70).[35] These skills are necessary to succeed in reaching any community college goal, i.e. completing a course, completing a re-training program, entering or re-entering employment, earning an AA/AS degree, transferring to a four-year college, or fulfilling a personal learning plan. The exact foundation will be determined by the college faculty, but foundation skills are universal and would be required of all students matriculating toward a certificate or degree, regardless of cluster.

Faculty will also devise a range of assessment tools to help determine which of these skills students already possess--many students will already have some or all of these skills. Individual Learning and Service Plans would document these skills.

Core Competency Skills (the next level of abilities and the middle ring on the circle on Figure 1) have higher level requirements in mathematics, English, technical fields, social science, and other subjects. Core competencies also include the next level from SCANS. (See Appendix, pages 65-70) They would be required of all students in a cluster since these are the basics needed to succeed in any program in a cluster. They could be achieved through an "Introduction-to-Cluster-X" course as well as beginning general courses. While these might be cluster-specific, they may also be quite similar to the competencies outlined for

Figure 1

School-Based and Work-Based Learning Activities Model



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another cluster. Where similarities exist, coordination and collaboration are encouraged. Cluster faculty will determine core competencies methods for assessment. Figure 2 (page 30) shows how career clusters interact with the components of the Learning Activities Model presented in Figure 1.

Program Curriculum Skills (the outer ring of Figure 1) includes the more advanced SCANS skills. There are likely to be different curricula for various entry-level occupations, but several share specific courses. These curricula will include technical skills and other program-specific requirements. They will be designed by program faculty in consultation with business and industry advisors. Program faculty will also determine methods of assessing these curriculum skills.

One of the biggest challenges of this model will be providing work-based learning activities throughout a student's college experience. These activities will differ depending on a student's progress and should increase in complexity as the student gains skills and experience. For example, students enrolled in Foundation Skills courses (inner ring) might be conducting informational interviews with employers in fields they are exploring, or working on their employment autobiographies as a way of identifying their career interests. Students enrolled primarily in Core Competency courses and using services focused on this intermediate level might participate in job shadowing or internships that help them explore certain parts of a cluster. Students at the level of the outer ring, the Program Curriculum, will experience more sophisticated versions of work-based experiences such as cooperative education, apprenticeships, or focused internships.

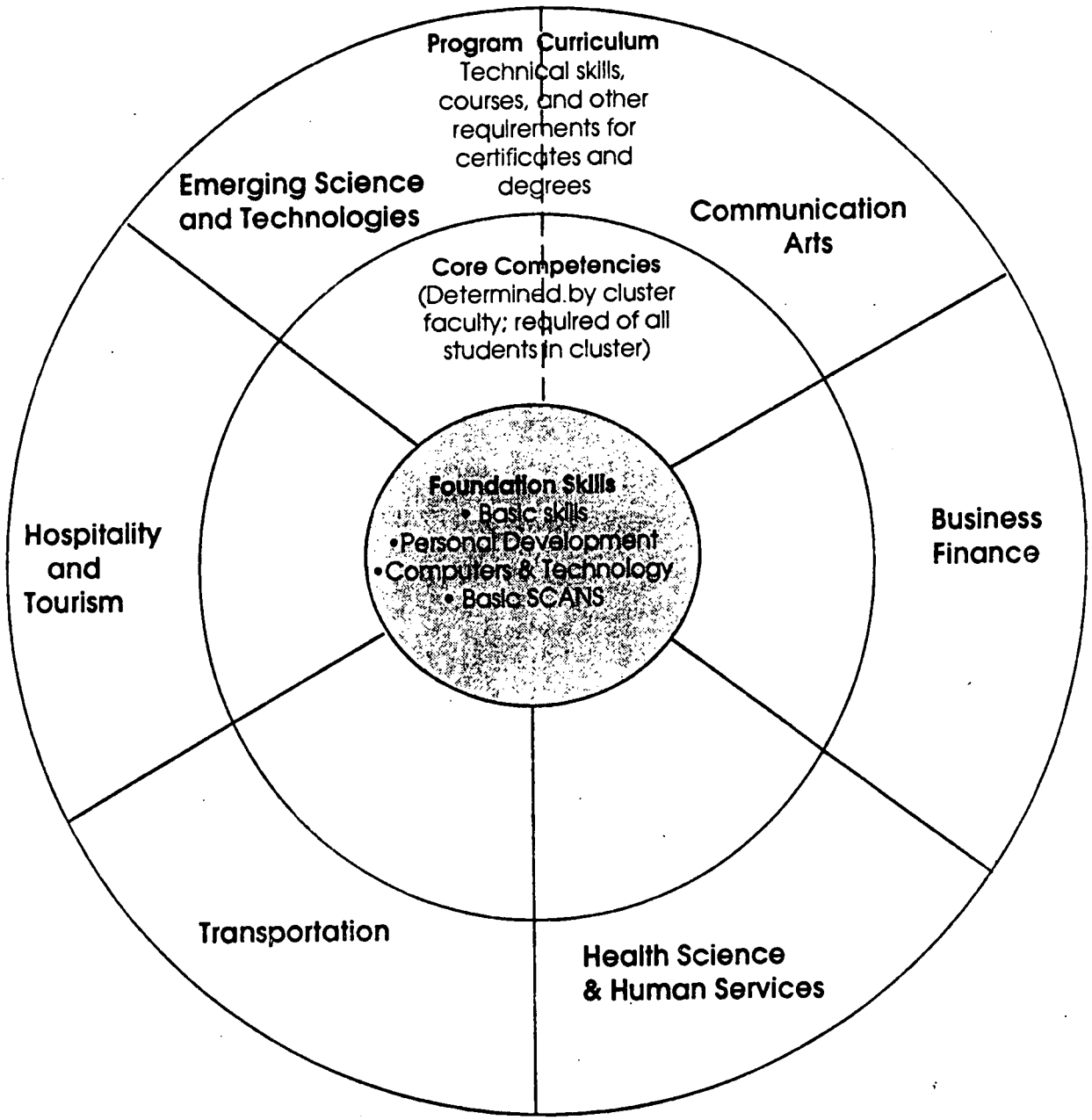
2. Career decision-making and educational planning

The School-to-Work Act envisions that all students will explore their interests and talents and learn about the world of work throughout their school years, and that these processes will continue and be refined at community colleges. A subcommittee of our Task Force worked on the concept to provide students with career decision-making and educational planning experiences and services at CCSF.

Currently, large numbers of City College students enter the college undecided about their futures; many report transfer or job preparation as goals without really knowing what these labels mean. They need many guidance and counseling services, but because they

Figure 2

School-Based and Work-Based Learning Activities Model with Representative Career Clusters



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are unclear about what questions to ask or what services are offered, many students do not seek help.

Effective career decision-making and educational planning must include activities that are student-centered, facilitate student success, and are available throughout the student's involvement with CCSF. Many people will receive these services over and over throughout their lives, as they move in and out of work and school. These services must take into account where students are developmentally in their career-decision process in order to recommend appropriate learning experiences. This system includes:

- Recruitment
- Intake
- Career Decision Making
- Educational Planning
- Job Placement
- Lifelong Learning

Recruitment. While the College has a stable supply of students coming from throughout the City and some neighboring counties, we must always reach out to newcomers to San Francisco and to all neighborhoods and community groups, encouraging people to pursue more education. Most current efforts of this kind are part of specific programs, but the college could use more systematic, on-going, college-wide and community-wide recruitment.

It has much to build on in creating programs for the five student populations discussed earlier--students who are preparing for college-level education, recent high school graduates, people needing retraining and upgrading, and current and potential entrepreneurs. City College currently provides remedial entry-level courses for students involved in skills training at a number of community-based organizations, including the Asian Neighborhood Design, the Mission Language and Vocational School, and the Career Resource Development Center. Programs and services which fit these students' needs will encourage them to continue their education at the college. Similarly, Tech Prep collaborations with the San Francisco Unified School District, such as the Biotechnology Tech Prep program at Balboa and other high schools, will give high school students meaningful contacts with the college before they graduate.

Most people seeking retraining, upgrading or entrepreneurial education come to the college on their own, but the college has relationships with many employers, particularly through its Contract Education Program, and with labor unions and community groups. Through these relationships the college can reach currently employed people who want new or more advanced skills. The new Small Business Development Center being created by the college in cooperation with San Francisco State and many other partners will improve outreach to small business people and other entrepreneurs.

As part of our CityWorks planning we hope to strengthen the college's recruitment efforts for Workforce Education programs and services as well as for students interested in other aspects of the college. Systematic recruitment activities and materials in many different languages should improve our current approaches.

Intake. When entering a community college, students need special services to help them identify appropriate programs for their needs. At City College this is especially true because our students arrive from a number of different places and with vastly different needs--recent high school graduates, graduates of four-year colleges seeking career training, recent immigrants in search of language and job training, displaced workers; displaced homemakers, high school drop-outs, employees seeking cross-training and career advancement, and others. City College currently offers some intake services such as counseling, advisement, matriculation and student support services. A workforce education system would provide strengthened comprehensive counseling and career orientation services, including information about the introductory courses in career clusters.

Career Decision-Making. In the United States, young people often spend most of their twenties moving in and out of a variety of jobs, trying to find careers with benefits and opportunities for advancement. Older people also struggle to find work that is satisfying and rewarding, having seldom made conscious and well-informed choices about careers. The Task Force wants to give people valuable assistance with career-decision making. This help would include personal counseling, aptitude and skills assessment, exploratory experiences in work places, information about the workforce, career clusters and specific jobs, and information about the payoff of various educational options.

This last item is particularly important, because extensive research shows that there are substantial benefits to completing community college certificates and associate degrees.

These benefits occur when community college programs allow students entry into positions where they can accumulate consistent work experience and on-the-job training for "careers" rather than "jobs." [8] Additional benefits vary by program and have been found to affect earnings more for women in some fields and for men in other fields. Up-to-date information on various fields should be readily available to students.

Educational Planning. With the information and assistance described above, new students will choose a tentative career path and course of study and then be helped with the creation of an Individual Learning and Services Plan. These plans will be carried with them by students as they move in and out of work and education, at City College or other institutions. As they proceed along their chosen educational path, students will modify their goals and access additional services. Furthermore, they will be able to change course within a career cluster as their interests and abilities become more apparent. The shifting of educational objectives within a cluster will be allowed without the loss of time or credits until students are in the final stages of their programs.

Job Placement. As students are successfully completing a course of study, job placement services will be guaranteed. Existing job placement services at City College are minimal. The college will examine how best to deliver these services and ensure coordination that will maximize existing relationships. A positive working relationship with business and industry is necessary for all workforce education activities, and particularly for placement. Employers who provide internships and other work-based learning experiences frequently offer career employment to students.

Lifelong Learning. Today's workforce requires continuous improvement and upgrading of workers' skills. With its broad range of programs and services, including contract education, City College can meet many lifelong learning needs. Flexibility to come in and out of the system, is built into the model.

The Career Decision-Making and Educational Planning components presented here are a significant departure from current ways of operating. This plan strives for closer relationships between services and programs than we now have. Students will experience coherent sets of activities which inform and reinforce one another. For example, aptitude testing may suggest that students rethink their initial ideas about careers, or student observations at work sites may prompt changes in their Individual Education and Service Plans.

City College services urgently need to be integrated into a much more efficient and effective system. In some cases the college may not be able to provide services to particular students as effectively as some of its community-based organization partners can. Some students will be better served at less cost if the college is able to work collaboratively with others and utilize the recruitment, screening, orientation, counseling and/or job placement services of community-based organizations which serve particular neighborhoods or groups of students.

The Task Force has two general recommendations to enhance the career decision-making and educational planning in existence:

- Integrate current services into a coherent, flexible systems.
- Develop formal or informal agreements between other educational institutions, community-based organizations, or employers who can support these efforts.

3. Connecting Activities

The School-to-Work Opportunities Act recognizes the employers and educational providers must be helped to work together on workforce education systems. The Act's third program element, in addition to School-Based and Work-Based Learning Activities, is Connecting Activities. These activities include:

- Matching students with employer's work-based learning opportunities.
- Serving as a liaison among the employer, school, teacher, parent and student, and, if appropriate, other community partners.
- Providing technical assistance and services to employers in designing work-based learning components and case management services while also training teachers, workplace mentors, and counselors.
- Providing assistance to students who have completed the program in finding an appropriate job, continuing their education, or entering into an additional training program.
- Providing assistance to schools and employers to integrate school-based and work-based learning and integrate academic and occupational learning.
- Collecting and analyzing information on post-program outcomes of student participants in the School-to-Work Opportunities program which may include

information on gender, race, ethnicity, socio-economic background, limited-English proficiency, and disability.

- Linking youth development activities under the School-to-Work Opportunities program with employer and industry strategies for upgrading the skills of their workers.

Many programs in various parts of the country have developed valuable connecting activities which have contributed greatly to their success. Three representative examples include:

- Craftsmanship 2000
- Project Protech
- Lehigh Valley Business-Education Partnership

Craftsmanship 2000 is a four-year skilled metalworking program started in 1992 by the Tulsa, Oklahoma Metropolitan Chamber of Commerce in partnership with the Tulsa Public Schools, the Tulsa Technology Center (formerly the local "vo-tech"), Tulsa Junior College, and a number of employers. Craftsmanship 2000's connecting activities have enabled them to provide stipends and bonuses to students paid for by employers.

The impetus for this program came from the Hilti Corporation, a manufacturer of metal fasteners headquartered in Liechtenstein. Hilti established its western hemisphere headquarters in Tulsa in 1980, then could not find the quality of craft employees it was used to in Europe. In 1990, Hilti arranged for a group of Tulsa Chamber members and their spouses to visit European apprenticeship programs. Discussions based on this experience led in 1992 to the first group of 16 high school juniors in Craftsmanship 2000.

Selection for the program depends on a combination of achievement, aptitude and interest tests. During their junior and senior years in high school, Craftsmanship 2000 participants spend eight hours a day at the Technology Center--four hours in academic classes and four in the machine shop. They are taught a rigorous, outcome-based curriculum by a team of high school and Technology Center instructors. Each student receives a stipend, furnished by employers, and works full time in the summer at a participating firm. After graduation, many go on to Tulsa Junior College and earn an associate's degree. The college awards the apprentices 25 credit hours for their Craftsmanship 2000 experience after they complete 12 units on the campus.

Project Protech was started in 1991 by Boston hospitals which were worried about turnover among their lab technicians, physicians assistants and other support personnel. New employees would complete extensive training at the hospitals' expense, work diligently and leave within the year. In cooperation with the city's schools and Private Industry Council, Protech helps recruit and support at risk students through completion of high school and matriculation in postsecondary education. Of 54 seniors in the Protech class of 1994, 49 had accepted enrollment at postsecondary schools by September and at least 60% were studying for health industry careers. Protech now grooms students for business, finance and utility company careers, and has received a $1.2 million federal School-to-Work implementation grant for reaching 380 students in Boston schools in the next two years.

Protech's most notable connecting activity is a large staff which provides extensive, personal support services for participants--helping them get to school and work on time, referring them to community agencies for needed assistance, and assisting them with college application forms. This support is essential for the population Protech serves, which includes many people from troubled urban neighborhoods. Also, much of Protech's instruction happens at workplaces, providing another important connection.

The **Lehigh Valley Business-Education Partnership** was started in the late 1980s by school superintendents and the recently retired Chief Executive Officer of a Fortune 500 company who has been Chairman of the American Council of Education, United States Chamber of Commerce, and the national chamber's Education Committee. As of mid-1995, the partnership, renamed the Lehigh Valley 2000: Business-Education Partnership has completed action plans, published a variety of resource documents, provided summer internships for teachers at local companies and created a Lehigh Valley Leadership Academy. Its *Roads to Success*, available in both English and Spanish, describes approximately seventy enrichment opportunities for children and youth in the Lehigh Valley. Its annual Business Education Fall Showcase is a one-day event open to the public, and its *Strategic Planning Tools* handbook is used by at least six Lehigh Valley school districts.

This partnership is a national model of the kind of cooperation possible between education, business and community leaders. Its comprehensive range of connecting activities should encourage similar efforts in San Francisco.

City College Connecting Activities

City College is already working on important connecting activities of its own. The most significant and promising may be the Bay Area Transition to Career Center, an effort to strengthen and coordinate the college's capabilities for facilitating internships and broad partnerships with industry, other education providers and community based organizations. The Walter S. Johnson gave the college a two-year, $150,000 grant to start the Center in 1995.

The new Center is becoming a common contact point for all City College paid and volunteer internship activities and for employer involvement with internships. This fall it will publish an Internship Program Handbook that will support new internship development efforts, standardize program procedures and data collection, and document the range of existing and proposed internship opportunities. The Center is also building relationships around internships and other workforce education activities with the San Francisco Unified School District. Under the name "The Career Connection," the Center will market the colleges' programs and students to potential internship sponsors while educating City College faculty, staff and students about internships. Next year the Center will develop and sponsor a model seminar series for interns from a variety of programs, so that they can help each other with communications skills and other work competencies, reflect on what they are learning from their assignments and be supported in integrating what they learn from their internships with their on-campus study.

The Transition to Career Center will continue to help develop college-wide capacities for improving the school-to-work transition through internships and other work-based learning. They will also manage some innovative programs directly, involve other community colleges and regions of the Bay Area in its programs and services, and research work-based learning and communicate its results to the college community and to the larger Bay Area.

INFRASTRUCTURE AND SUPPORT SYSTEMS

In creating an integrated workforce education system, City College faces an enormous challenge: developing career clusters; delivering programs which integrate connecting activities with school-based and work-based learning activities, including career decision-making and educational planning; and tailoring these programs for various student populations, working all the while with a wide variety of employer, educational and

community partners. Accomplishing these tasks will require significant changes in the College's support systems and infrastructure. While many different aspects of the college will be affected, this discussion focuses on seven key items:

1. funding
2. facilities
3. educational delivery systems
4. skill standards and portable credentials
5. performance assessment
6. job placement
7. staff development
8. partnerships

1. Funding

Federal and state moneys to support Workforce Education are likely to be modest and very competitive. To create effective School-to-Work programs, the colleges will have to free up money by restructuring and redesigning many existing programs and services, reallocate existing revenues and acquire new sources of support. They will need funds for staff development and faculty training in new careers. They will need staff to create and manage partnerships and programs, to redesign curricula, to develop and facilitate internships and other work-based learning, and to develop jobs for graduates. They may need fund-raising staff to help them meet partnership requirements and grant matches.

The Task Force recommends that the college concentrate whatever funds it has for Workforce Education in the next few years on pilot projects that come as close as possible to including every aspect of the Learning Activities and Career Decision-Making and Educational Plan models we propose. It believes that the most effective pilot projects will be in cluster areas where high-paying career openings are available. Once established, the programs will provide a model to be used to establish programs in other career clusters throughout the college.

2. Facilities

Most of City College's facilities were designed for a kind of learning that is disappearing. It will have to retrofit buildings, adding flexibility, responsiveness and a capacity for customization to as many facilities as possible. City College also needs to create a network of community locations for work-based and school-based learning in space which is either donated or made available to colleges for nominal fees. Finally, the college needs

to maximize its capability for all kinds of distance learning and probably create some "virtual campuses" for learners who are unable to come to college facilities.

3. Educational Delivery Systems

The number of students who can take on-campus, full-time day programs over several years is relatively small. Today's students need access to modularized learning at their homes, workplaces, and local community centers. Distance learning and other forms of technology can make learning possible for people unable to come to the college. Various scheduling arrangements are also needed. Some people want to be part of learning communities, others need great flexibility and independence to meet their goals. More and more, education will be available anytime, anywhere, and delivered many different ways.

There are numerous examples of effective teaching and learning strategies being used by community college faculty across the country that are moving in this direction. Two examples are "Learning Communities," where faculty coordinate courses and assignments in blocks for cohorts of students and "Open-entry/open-exit" courses that facilitate self-paced learning for students whose learning styles and preference do not match traditional structures. Classes coordinated with community-based organizations also are often more flexible and increase accessibility.

4. Skill standards and portable credentials

Employers complain that high school diplomas or community college degrees do not tell them what skills graduates have. Oregon and other states are mandating various certificates of mastery for all high school students, and the federal government has funded twenty-one different efforts to develop voluntary national skills standards in fields as diverse as printing, electronics, retail trade, and biotechnology. California's School-to-Work Plan commits the state to similar efforts.

City College students need workforce education programs which will give them demonstrable, measurable skills and portable credentials that employers recognize. The faculty should document the students' skills at various points during a program, so that students have proof of their skill and competency levels.

5. Performance assessment

Performance standards raise important questions about accurate methods of assessing whether a student has learned a skill or has mastered a competency. Traditional

assessment methods such as teacher-created paper and pencil objective tests provide limited information on students' real skills. A broader kind of assessment has many purposes, including seeing if people can use what they've learned appropriately in the real world; giving students and teachers information on students' ability to solve problems and apply what they know to new contexts; and giving students feedback on what they've learned so that they can improve their skills.

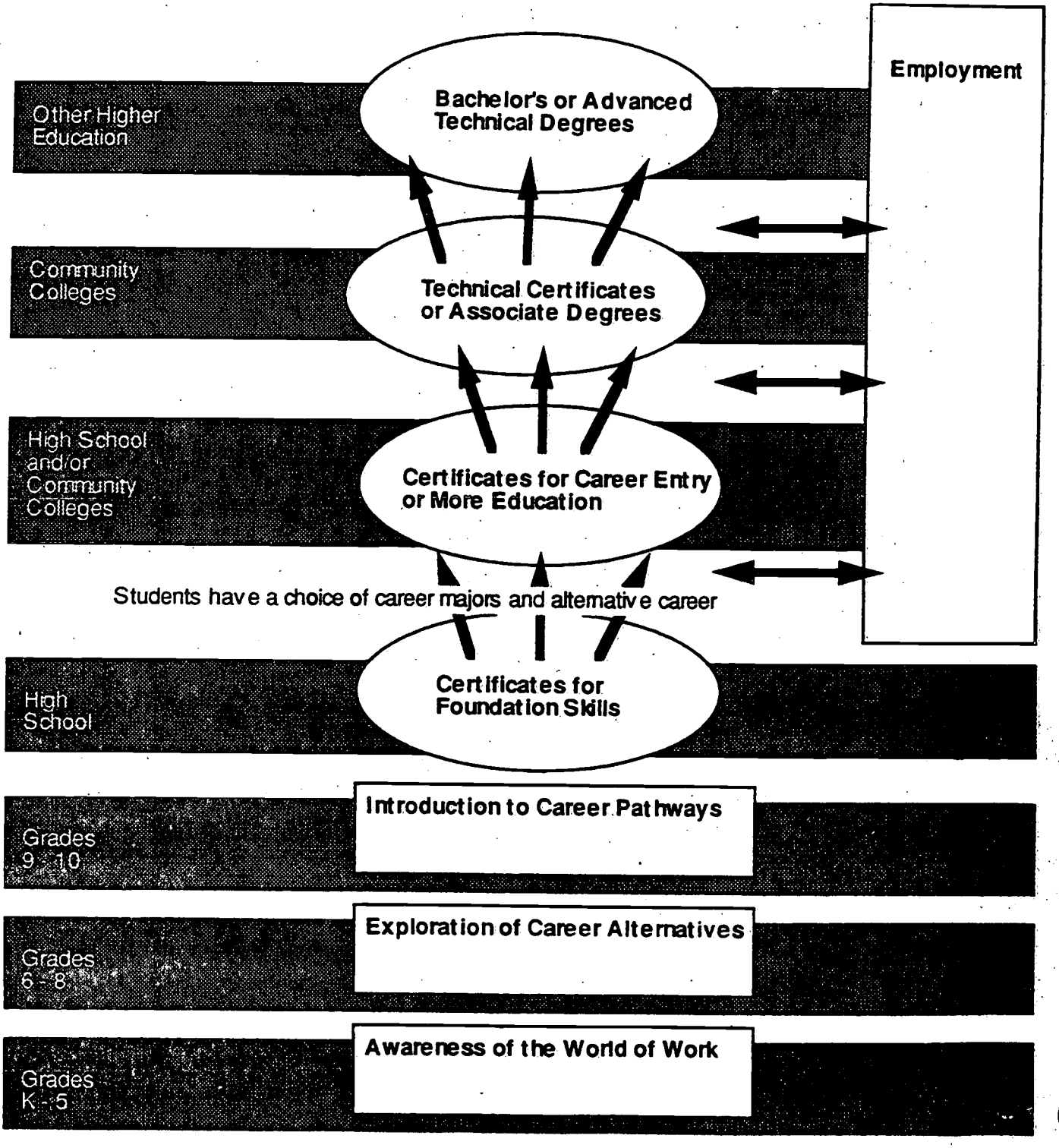
Assessment practices that give students and teachers useful information on skill mastery are often described as "performance assessment" tools and strategies. Examples include open-ended tasks, observations of students at work, and individual and group portfolios or projects. Writing is frequently involved, because writing clarifies and reveals thinking. Video simulations, multimedia presentations, panel discussions, and other forms of presentations are also common. A combination of these approaches can accommodate individual preferences for different media and/or differences in communication styles.

One national effort to create a variety of examinations for a Certificate of Initial Mastery proposes three components: performance examinations, assessments of student projects, and assessments of a portfolio of student work. This New Standards Project describes these assessments as very much like the scout merit badge system. Students will be able to accumulate "badges" over a period of years, work at their own pace, and compare their own performances against a set of published criteria.

Figure 3 (page 41) shows how a foundation skills certificate could be the basis of a system of certification for high schools in California. Young people could have a variety of routes for workforce education after completing a Certificate of Foundation Skills at 16, including entering a community college, completing a recognized certificate similar to today's vocational program certificates and/or an associate's degree, then transferring to a four-year college, going to work, or both.

Figure 3

A MODEL FOR CAREER PATHWAYS AND CERTIFICATION LEVELS



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6. Job Placement

Job placement builds accountability and feedback into workforce education programs, giving faculty continuous readings on the demand for the skills they are helping people learn. It will also be a requirement for programs which receive School-to-Work funding, for which City College will compete with private proprietary schools and non-profit training agencies which document their placements carefully.

Several units of the college now have job placement activities. These efforts, which are generally grant-funded, usually address narrowly defined student populations and may be regarded as peripheral to the college. Currently, representatives of the various job development and placement programs meet regularly to work at coordinating services. This ex-officio coordinating group is developing methods for sharing job and employer information, resources, and databases. Group meetings provide a forum for identifying placement system needs and developing collaborative strategies for addressing needs. this voluntary effort should be recognized and supported by the college.

The college should work towards moving job placement from the periphery to full integration into workforce preparation programs. In doing so, the college also needs to create a more effective system for tracking placement in order to respond to increasing demands for accountability and to provide a measure of program currency and effectiveness.

7. Staff Development

The provision of staff development for faculty is crucial to making the changes we propose. In order to create new curriculum, work effectively with partners, and develop new evaluation tools, faculty will need training and assistance. This training must be flexible in time and place. It should also provide incentives for faculty such as stipends and release time so that faculty realize that the college values their spending time on making this system work.

8. Partnerships

City College already has many different partnerships, with K-12 schools and four-year colleges, foundations and other public and private funders, individual employers and employer groups, industry organizations and community groups, and local, regional and state agencies Often these partnerships are informal and depend on personal relationships

between a very small number of college and partner staff. The college needs partnerships that are more strongly institutionalized, that are organized and funded for success and longevity, and that involve many different programs, personnel, and students. It is in the interest of City College and its students to expand and strengthen the institutional capacity to develop and sustain effective partnerships.

Integrating All the Elements--the Program Worksheet

The CityWorks Program Worksheet (see Appendix, pages 73-76) presents all the elements of the Task Force's Model for Excellence in Workforce Education--student populations, career clusters, program elements, and support systems--in one display. Pilot projects which include all these components will be developed during 1995-6 and give City College a sense of the usefulness of this model. The Strategic Plan in Chapter VI presents the Task Force's recommendations for how to move toward experimenting with the model in several clusters and adopting it across the college over time.

VI. USING THE CITYWORKS MODEL: A STRATEGIC PLAN FOR HIGH-QUALITY WORKFORCE EDUCATION

This section presents five goals for strengthening workforce education throughout City College. As used here, goals are broad statements desired by City College and its individual and organizational constituents. They are operationally specified by a set of strategies and related actions from Chapter V. As the implementation plan moves forward, strategies and actions will be modified, added, or deleted.

Goal 1: Promote a collegewide commitment to a new workforce education plan.

Goal 2: Establish a collegewide infrastructure to support the plan

Goal 3: Establish working model of the CityWorks plan.

Goal 4: Promote the highest levels of student success, student learning and teaching excellence.

Goal 5: Disseminate CityWorks to other CCSF Departments and Schools

Goal 1: Promote a collegewide commitment to a new workforce education plan.

City College has a long and successful history of providing educational services to students seeking to enter the workforce for the first time and to those wishing to retrain and upgrade their skills. The CityWorks plan recognizes that the college must take some additional steps to align CCSF programs with the new dramatic developments occurring in the workplace. The first step has been taken with the completion of the CityWorks plan. The second step is the building of a working consensus among members of the CCSF community about the plan and a strong stated commitment from the leadership of the college endorsing the goals and objectives of the CityWorks plan. This would include a statement of support from the Board of Trustees.

Goal 2: Establish a collegewide infrastructure to support the plan

The CityWorks plan requires an institutional commitment of human and financial resources over a five year period. Once the Board of Trustees and the Chancellor have resolved to support the plan, strategies would need to be established to build the appropriate internal support for the plan. This would include creating:

- a special fund to support faculty
- a CityWorks coordinator position
- organizational groups to support workforce education

Special fund to support faculty

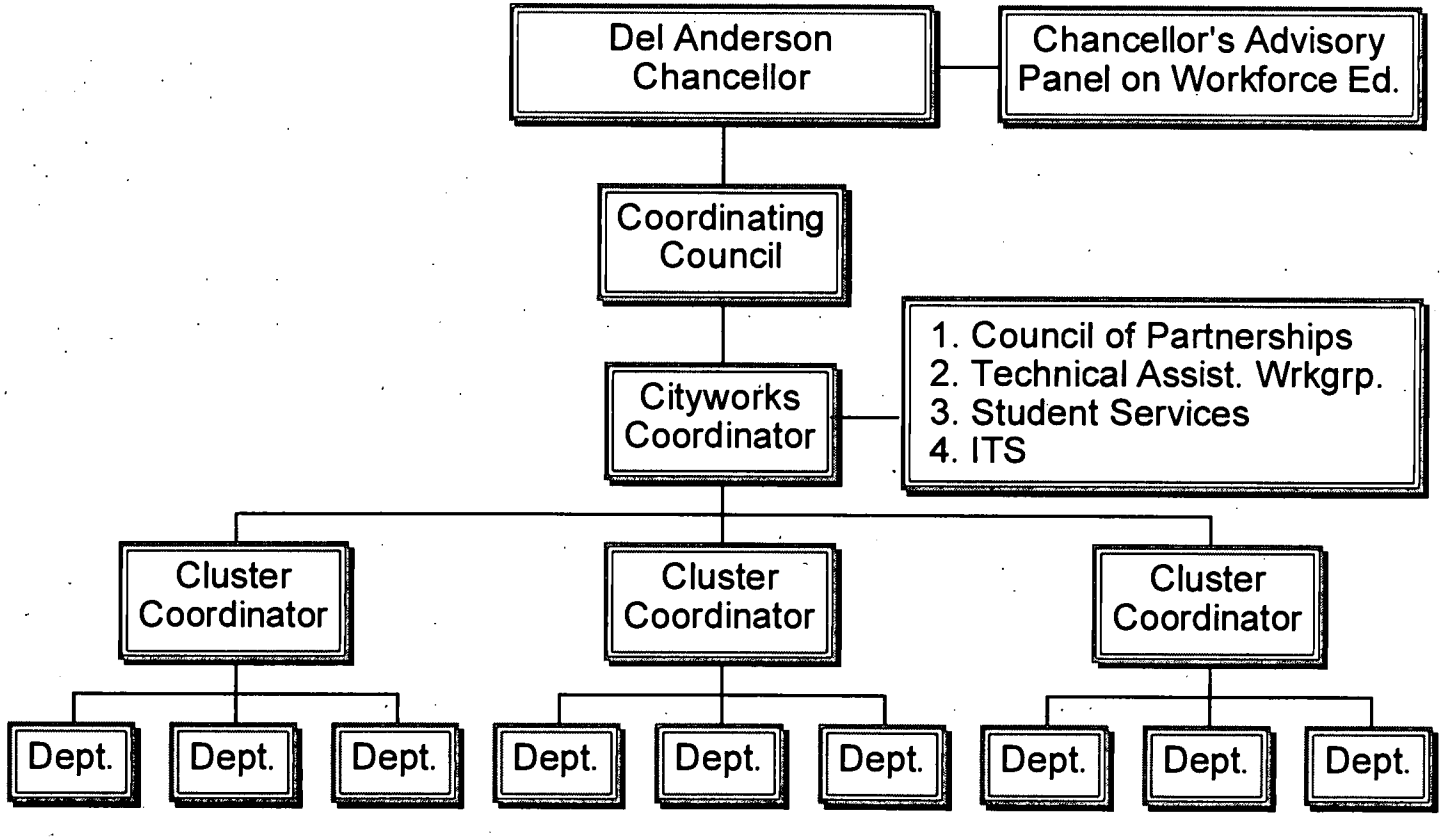
The Office of Institutional Development will work with school deans and faculty to raise funds from federal, state and local sources to support the design, piloting and implementation of the plan. The refinement, piloting and implementation of the City Works model will likely take three to five years. At each phase, college faculty will need direct support for training, curriculum development, evaluation of alternative modes of instructional delivery, and extensive links with professionals outside the college. To support this effort we suggest establishing a Workforce Education Fund created from the college general fund and alternative funding sources. This fund would be used to seed pilot projects based upon the CityWorks model. Faculty could utilize these funds for:

- reassigned time to design, establish and test pilot curriculum for specific clusters
- travel to other colleges to assess workforce education models
- purchase of curriculum packages and software
- release time to take training
- consultants
- stipends to faculty willing to train others.

CityWorks Coordinator

The position of CityWorks Coordinator would give an individual overall responsibility for creating and implementing the CityWorks model. This person would report directly to the Chancellor and work with an array of groups set up to help successfully launch and create projects. (See Organizational Chart page 46.) The college should seek an individual with experience at community colleges, who possesses excellent organizational skills and has a clear understanding of current workforce development philosophies.

CITYWORKS PROPOSED ORGANIZATIONAL CHART



Organizational Groups

In addition to establishing a special fund and a coordinator's position, the college would create several organizational structures to plan, implement, manage, and oversee workforce education programs. These groups would not require bringing on additional staff but would represent a reconfiguring of current staff:

- a CityWorks Coordination Council
- a Technical Assistance Workgroup
- a Chancellor's Advisory Panel on Workforce Education
- a Council of Partnerships

CityWorks Coordination Council

This Council would help assure the implementation of the CityWorks model and plan within the college. Individuals on this Council would solve problems, act as advocates, and be a liaison to their units. This would promote effective coordination and efficient use of resources. A CityWorks Coordination Council must be established with representation from the faculty, instructional and student service program involved in the implementation as well as administrators from the three administrative chains. Students should also be represented on this council.

Technical Assistance Workgroup

The Technical Assistance Workgroup would facilitate the work of specific pilot projects, especially as it applies to implementation of new learning activities and career decision making and educational planning. This group can provide assistance to faculty and staff who are responsible for implementing parts of the plan. Included in the Workgroup would be faculty and staff who have successfully implemented workforce education courses and programs, representatives from the Office of Staff Development, Information Technology Services, Admissions and Records, Financial Aid, and Matriculation, members from other colleges, and employers from the cluster area.

Chancellor's Advisory Panel on Workforce Education

CCSF would establish a group to ensure a high level of visibility within the employer sectors as the workforce plan is implemented. A quarterly meeting convened by the Chancellor and her staff would be held to exchange information, report on new developments, provide progress reports and hear new ideas with private and public sector employers in and around the City and County of San Francisco.

Council of Partnerships

A Council of Partnerships would be established to pursue linkages with education institutions, employers, public agencies, and community based organizations. It would coordinate discussions between external organizations and CCSF programs interested in pursuing the CityWorks model. Working with the new Career Connection program, the Career Development and Placement Center, and other well-established college programs with partnerships, the office would act as a broker to create new projects and programs between City College and employers throughout the region for internships, other work-based activities, and connecting activities. A database of employers interested in providing work-based learning opportunities would be available to all CCSF programs.

Goal 3: Establish working model of the CityWorks plan.

The CityWorks plan we are suggesting will, of course, be modified and refined as it is disseminated throughout the campus. After this input, a pilot program can be implemented. A piloting strategy enables the college to focus resources on a limited number of projects and allows the faculty to test and improve the model before it is established in other clusters.

To review, chapter V discussed the program elements that would be part of our model including:

- learning activities
- career-decision making and educational planning activities
- connecting activities

We also identified three levels of skills illustrated in Figure 1 on page 28 that the curricula should include:

- foundation skills
- core competency skills within a cluster
- program specific skills

To create the base of the **learning activities** for students, faculty would work in consultation with industry, community-based organizations, or other appropriate partners to design a pilot program incorporating the SCANS competencies. A **foundation skills framework** would ensure that students have basic communication and computational skills, good work habits and other personal management skills, problem-solving and teamwork skills, and some exposure to computers and related technology. A **core competencies framework** within each cluster would identify the common background, information, and skills needed by students preparing for any of its programs. In many cases, the core competencies will build upon existing "Introduction to Cluster X" courses. The content of the competencies, the school--and/or work-based learning experiences, and methods of documenting accomplishments will vary among the clusters. A **program-specific skills framework** will include the more advanced SCANS competencies.

The next element of the model includes the **career-decision making and educational planning activities**. To be successful in careers, many community college students need a variety of services including extensive assistance in developing personal career education goals. A Task Force subcommittee has worked on identifying the elements of a comprehensive system of student services, describing how these services could be improved and integrated with one another and with learning experiences. Current services, particularly recruitment, counseling and career advising would be strengthened.

Another part of the plan calls for enhancing college job placement operations. We can improve coordination of activities and allocate additional resources to ensure that all students receive appropriate job placement services.

Connecting activities are an essential part of workforce education. To have a successful program, City College must provide technical assistance and services to employers in designing work-based learning components and case management services while also training teachers, workplace mentors, and counselors. Connecting activities might also include providing assistance to schools to integrate academic and occupational learning.

Once these program elements are in place, the pilot program will be ready to be tested. Students can begin taking classes that systematically integrate workforce learning into the curriculum.

Goal 4: Promote the highest levels of student success, student learning and teaching excellence.

The CityWorks model and plan rests upon the college's commitment to reaching the highest possible levels of student learning, student success, and teaching excellence. These are the foundation blocks for creating an attractive and inspiring workforce program at the college. Ultimately the CityWorks plan will be adopted and supported by faculty and students if it can be shown to be a better alternative than the current programs.

Establishing this reputation rests on careful evaluation. The CityWorks model focuses on competency based curriculum which will require faculty to develop student outcome measures. We must evaluate and assess what students have learned, how well they utilize what they have learned, and what its relevance is to their career choices. Student satisfaction measures will also need to be established as well as satisfaction measures of employers.

To carry out this assessment a group of faculty from the pilot clusters and the Office of Research will work together to design appropriate measures. Measures should include wherever possible and appropriate, the use of the portfolio assessment approach to evaluating student work.

As student progress is monitored through the new curricula, data will be provided to our Management Information System. This data would be organized into user-friendly reports based upon what faculty need to understand about students' progress through the program. Reports would be made available each term. In addition, the Office of Research would disseminate to all cluster faculty annual reports on all measures. Annual meetings of all cluster faculty, members of the Office of Research, the cluster partners from the employer and community based organization sector would focus on a discussion of student progress and approaches to improve student learning and success.

Goal 5: Disseminate CityWorks to other CCSF Departments and Schools

After at least two years of testing and implementing the CityWorks model, a dissemination phase could begin. Other occupational clusters could begin to adapt the CityWorks model to their program and utilize the experience of the pilot clusters to guide their work. Cluster faculty who do not wish to wait until the pilot clusters are completed testing their curriculum, could begin the design phase of the plan. Some piloting could begin even before the final results are know from the pilot clusters. The focus, however, is on a careful incremental approach to disseminating the CityWorks model to avoid making the same mistakes over again. The goal of the CityWorks plan is to complete the dissemination phase within five years of the completion of the pilot programs.

Goal 1: Promote a collegewide commitment to a new workforce education plan.

Strategy	Action	Who	When
1.1 Promote a college-wide discussion about the CityWorks plan.	• Present plan to Master Plan Committee (MPC). • Circulate plan among CCSF community for feedback and discussion.	Task Force MPC*	Fall 95
1.2 Seek a Board of Trustees policy statement supporting the workforce education plan.	• Present plan to Board of Trustees. • Request policy statement from Board.	MPC* Board of Trustees	Fall 95

* Master Planning Committee

Goal 2. Establish a collegewide infrastructure to support the plan.

Strategy	Action	Who	When
2.1 Provide support for faculty to refine and implement plan.	• Establish workforce education innovation fund. • Establish staff development fund.	ODR&P*, deans, & faculty	Fall 95
2.2 Provide administrative support system.	• Establish Coordination Center for work-based activities. • Establish Technical Assistance Workgroup. • Establish CityWorks Coordination Council. • Establish Office of Institutional Development		
2.3 Create partnership structures.	• Establish a Chancellor's Advisory Panel on Workforce Education • Establish an Office of Partnerships. • Establish relations with community-based organizations.		

*Office of Development, Research, & Planning

Goal 3. Design and implement the CityWorks plan through a pilot project.

Strategy	Action	Who	When
3.1 Designate clusters.	• Confirm with Hospitality and Health faculty and administrators their interest in becoming the pilot programs. • Identify faculty to take leadership roles in plan design.		Fall 95
3.2 Design plans for each cluster.	• Establish an action plan and time line for each cluster. • Create partnerships with employers within the cluster area. • Develop a Foundation Skills framework for clusters. • Develop Core Competencies for clusters. • Develop program-specific skills for clusters • Develop the Career Decision-Making Model. • Strengthen the college's job placement operation.		Spr. 96
3.3 Implement the action plan.	• Hold classes in pilot clusters that incorporate CityWorks model. • Provide internships and other work-based placements for students. • Offer new career services to students.		

Goal 4: Promote the highest levels of student success, student learning and teaching excellence.

Strategy	Action	Who	When
4.1 Establish measures for student outcomes and satisfaction.	• Establish an assessment/evaluation group. • Establish assessment measures. • Design assessment tools.	cluster faculty & Office of Research	
4.2 Monitor student progress through the new curricula.	• Carry out evaluation. • Organize data into user-friendly reports. • Disseminate annual reports of all measures. • Hold annual meetings to review student progress and program approaches.	cluster administrators faculty, Office of Research, employer partners	

Goal 4: Promote the highest levels of student success, student learning and teaching excellence.

Strategy	Action	Who	When
4.1 Establish measures for student outcomes and satisfaction.	• Establish an assessment/evaluation group. • Establish assessment measures. • Design assessment tools.	cluster faculty & Office of Research	
4.2 Monitor student progress through the new curricula.	• Carry out evaluation. • Organize data into user-friendly reports. • Disseminate annual reports of all measures. • Hold annual meetings to review student progress and program approaches.	cluster administrators faculty, Office of Research, employer partners	

Goal 5: Disseminate CityWorks to other CCSF Departments and Schools.

Strategy	Action	Who	When
5.1 Identify new clusters.	• Review current labor market analysis. • Determine new clusters. • Identify faculty to take leadership.		
5.2 Design plans for each cluster.	• Review evaluation information from pilot programs. • Establish action plan for each cluster. • Develop Foundation Skills framework for clusters. • Develop Core Competencies for clusters. • Develop program-specific skills for clusters.		
5.3 Implement the action plan.	• Hold classes in pilot clusters that incorporate CityWorks model. • Provide internships and other work-based placements for students. • Offer new career services to students. • Evaluate student progress as well as student and employer satisfaction.		
5.4 Continue process with new clusters.	• Follow previous process.		

ENDNOTES

1. Workforce Education Task Force Mission and Function Statement, February 7, 1995.
2. Warnat, 1995.
3. Reported in Applebome, 1995.
4. Richman, 1994a; Richman, 1994b.
5. For more detailed analysis of the trends, please consult Working Paper #1, "Global and Regional Workplace Trends and Issues," February 7, 1995.
6. Handy, 1990.
7. Ibid., p. 94.
8. Council for Adult and Experiential Education, 1992.
9. Ibid. p. 3.
10. Richman, 1994a.
11. Bay Area Economic Forum, n.d.
12. Planning Department, City and County of San Francisco, April 1995.
13. ABAG, 1994.
14. EDD, 1993.
15. EDD, 1993.
16. Richman, 1994.
17. Ibid.
18. Bay Area Economic Forum, 1989.
19. CCSF Small Business Development Center Proposal, 1995, p. 37.
20. California Department of Finance, Economic Research, 1995.
21. Small Business Development Center Proposal, 1995, p. 37.
22. Johnston, 1987.
23. Brock, 1991.
24. Richman, 1994a.
25. Bay Area Economic Forum San Francisco County Information Sheets, 1994.
26. EDD, 1993.
27. Reported in Sloan, 1995.
28. Belenky et al., 1986.
29. Brown and Palincar, 1989.
30. Gabelnick et al., 1990.
31. Collins et al., 1991.
32. Kolb, 1984.
33. The distinctions between students based upon their relationship to the workforce come from Lane Community College. See Bourque, 1995. The Workforce Education Task Force adapted Lane's four types and expanded the current worker category into two: retraining and upgrading. It should be understood that the two categories are set up to indicated the ends of a continuum of these current workers rather than two easily distinguished groups.
34. EQW Issues, September 1992, p. 7

35. The National Center for Research in Vocational Education has done extensive work in this area. See Grubb and Kraskouskas, 1992.
36. Department Heads and Instructional Deans were contacted using the Provost Office voice-mail system in February 1995. The fourteen programs not yet connected to the voice mail system were each contacted individually.
37. Baker and Reed, 1994, p. 35.
38. SCANS skills include: learning how to learn; reading, writing, computation; listening and oral communication; creative thinking/problem solving; developmental skills of self-esteem, goal setting, motivation and personal career development; group effectiveness skills such as interpersonal skills, negotiations, and teamwork; and influencing skills. They increase in complexity and sophistication. SCANS, 1991.
39. Grubb, N. "Correcting Conventional Wisdom: Community College Impact on Students' Jobs and Salaries." AACJC Journal, June/July 1992, 10-14.

REFERENCES

Anderson, J. A. and Adams, M. "Acknowledging the Learning Styles of Diverse Student Populations: Implications for Instructional Design. In Teaching for Diversity, pp 19-33. Edited by N. Chism & L. Border. San Francisco: Jossey-Bass, 1992.

Association of Bay Area Governments (ABAG). Projections '94: Forecasts for the San Francisco Bay Area. Oakland, CA: ABAG, 1994.

American Electronics Association (AEA), Setting the Standard: A Handbook on Skills for the High Tech Industries. Santa Clara, CA: AEA, 1994.

Applebome, P., "Wanted: Some Workers With A Clue" New York Times, reprinted in San Jose Mercury News, February 20, 1995, pp. A1, A15.

Aring, M. K. "What the V Word is Costing America's Economy." Phi Delta Kappan, January 1993, pp. 396-404.

Bailey, T. Changes in the Nature and Structure of Work: Implications for Skill Requirements and Skill Formation. Berkeley, CA: National Center for Research in Vocational Education, University of California, 1990a.

Bailey, T. "Jobs of the Future and the Skills They Will Require." American Educator, Spring 1990b, pp. 10-15.

Baker, G. and Reed, L. W. "Creating a World-Class Workforce." AACJC Journal, April/May 1994, pp. 31-35.

Bay Area Economic Forum. The San Francisco Bay Area: Where Ideas, Industries, and Opportunities are Born. San Francisco, CA: Bay Area Economic Forum, p. 3, not dated.

Bay Area Economic Forum. The Strength of the Nine Bay Area Counties. San Francisco,CA: Bay Area Economic Forum, 1989.

Belenkey, M. F.; Clinchy, B. M.; Goldberger, N. R.; and Tarule, J. M. Women's ways of knowing. New York: Basic Books, 1986.

Bourque, M. "Working for the Workforce." Community College Times. vol. III, no. 3, February 7, 1995, pp 1, 8.

Bridges, W. "The End of the Job." Fortune, September 19, 1994, pp. 62-74.

Brock, W. E. "Continuous Training for the High Skilled Workforce." AACJC Journal, February/March 1991, pp. 21-25.

Brown, A. L. and Palincar, A. S. "Guided, Cooperative Learning and Individual Knowledge Acquisition." In Knowing, Learning, and Instruction. Edited by L. B. Resnick. Hillsdale, NJ: Erlbaum, 1989.

California Department of Finance, Economic Research. "San Francisco County." February 1995.

Callaghan, D. "Temping in S.F.? Welcome to the Workplace of the Future." San Francisco Chronicle.

Carnevale, A. P., Gainer, L. J.; and Metzer, A.S. Workplace Basics: The Skills Employers Want. Washington, DC: U.S. Department of Labor, Employment and Training Administration, and The American Society for Training and Development, 1988.

Chamber, J. G. "Preventing Risky Business in 8 Steps." Vocational Education Journal, vol. 64, n. 8. November/December 1989.

Collins, A.; Brown, J. S.; and Holum. A. "Cognitive apprenticeship: Making thinking visible." American Educator, Winter 1991.

Council for Adult and Experiential Education (CAEL). "Closing the Gap: New Solutions," Chicago, IL: CAEL, October 1992.

Cuban, L. Teachers and Machines: The Classroom Use of Technology Since 1920. New York: Teachers College Press., 1986.

Davidson, N. and Worsham, T., eds. Enhancing Thinking Through Cooperative Learning. New York: Teachers College Press, 1992.

Employment Development Department, Labor Market Information Division, Annual Planning Information, San Francisco County. State of California, 1993.

Erickson, B. L. and Strommer, D. W. "Learning styles and intellectual development." In Teaching College Freshmen, pp. 46-62. San Francisco: Jossey-Bass, 1991.

Fullan, M. G. The New Meaning of Educational Change

Gabelnick, F.; MacGregor, J.; Matthews, R.; and Smith, B.L.; "Learning Communities: Creating Connections Among Students, Faculty, and Disciplines." New Directions for Teaching and Learning, no. 41, (Spring). San Francisco: Jossey-Bass, 1990.

Grubb, W. N. and Kraskouskas, E. A Time to Every Purpose: Integrating Occupational and Academic Education in Community Colleges and Technical Institutes Berkeley, CA: National Center for Research in Vocational Education, University of California, 1992.

Handy, C. The Age of Unreason. Boston, MA: Harvard Business School Press, 1989.

Howe, K. "Temp Work is 28% of Job Growth, Study Finds" San Francisco Chronicle, September 6, 1993, pp. D1, D5.

Johnston, W. B. Workforce 2000: Work and Workers in the 21st Century. Indianapolis, IN: Hudson Institute, 1987.

Kiechell III, W. "How We Will Work in the Year 2000." Fortune, May 17, 1993.

Kolb, D. Experiential Learning: Experience as the Source of Learning and development. New York: Prentice Hall, 1984.

Kolb, R. and McIntyre, Organizational Psychology: A Book of Readings.

Kramer, F. "Demand Grows for Temporary Executives" San Francisco Sunday Examiner and Chronicle.

Krannich, R.L. and Krannich, C.R. The Best Jobs for the 1990s and Into the 21st Century. Virginia: Impact Publication, 1993.

Lankard, B.A. "The Changing Work Force." *Trends and Issues Alerts.* Columbus, OH: ERIC Clearinghouse on Adult, Career, and Vocational Education, 1993.

Lemonick, M. "Tomorrow's Lesson: Learn or Perish. Time, Fall 1992, pp. 59-60.

Lorenzo, A. and LeCroy N. "A Framework for Fundamental Change in the Community College." AACJC Journal, February/March 1994, pp. 14-19.

Marshall, R. and Tucker, M. Thinking for A Living. New York, NY: Basic Books, 1992.

Miller, L. "The Labor Challenge of the '90's" A Newsletter from the Offices of Leni Miller Personnel Inc. Fall 1989.

National Center on Education and the Economy (NCEE). America's Choice: High Skills or Low Wages! Rochester, NY: NCEE, 1990.

Nagle, T. "The Challenge: Effect of Economic Downturn and Fiscal Pressures on California State Budget." California Employment Development Department Presentation, San Mateo Private Industry Council, 1994.

Pennington, H. "The Challenges and Opportunities of Workforce Development." In Leadership *Abstracts.* Mission Viejo, CA: League for Innovation in the Community College, July 1994.

Perry, N. J. "The Workers of the Future.," Fortune, June 10, 1991.

Pine II, J. Mass Customization: The New Frontier in Business Competition. Boston, MA: Harvard Business School Press, 1993.

Resnick, L. B. Education and Learning to Think. Washington, DC: National Academy Press, 1987.

Richman, L. S. "The New Work Force Builds Itself." Fortune. June 27, 1994a.

Richman, L. S. "The New Worker Elite." Fortune. August 22, 1994, pp. 56-66.

Schoenfeld, A. H.; Smith, J. P.; and Arcavi, A. Learning. Berkeley, CA: University of California Press, 1990.

Schoenfeld, A. H. "Learning to Think Mathematically: Problem Solving, Metacognition, and Sense Making in Mathematics." In Handbook for Research on Mathematics Teaching and Learning. Edited by D. Grouws. New York: Macmillan, 1992.

Secretary's Commission on Achieving Necessary Skills (SCANS). What Work Requires of Schools: A SCANS Report for America 2000. Washington, DC: U.S. Department of Labor, 1991.

Sizer, T. R. Horace's Compromise: the Dilemma of the American High School. Boston, MA: Houghton Mifflin, 1984.

Sloan, B. "Beyond 2000: Futures Assembly Draws Community College Innovators." Community College Times. vol. 7, no. 8, (April 18, 1995): pp. B-7.

Small Business Development Center Proposal, School of Business, City College of San Francisco, February 1995.

Stern, D.; Finkelstein, N.; Stone, J. R.; Latting, J.; and Dornsife, C. Research on School-To-Work Transition Programs in the United States. Berkeley: CA, National Center for Research in Vocational Education, University of California, 1994.

ERIC

"The Challenge: To Revitalize the Nation's Economy by Making Long-Term Investments in a Skilled Workforce." EQW Issues. Philadelphia, PA: National Center on the Educational Quality of the Workforce, July 1992.

"The Challenge: To Understand How the Growth of Technical Jobs in the Middle of Organizations Is Changing the Traditional Ways of Teaching Skills and Managing Work." EQW Issues. Philadelphia, PA: National Center on the Educational Quality of the Workforce, September 1992.

Vygotsky, L. Mind in Society: The Development of Higher Psychological Processes. Cambridge, MA: Harvard University Press, 1978.

Warnat, W. I. "The New System." Paper presented at the League of Innovation in the Community College Workforce 2000 Conference, San Diego, California, February 9, 1995.

Wersch, J. V. (1979) "From Social Interaction to Higher Psychological Processes: A Clarification and Application of Vygotsky's Theory." Human Development 22, (1979) pp. 1-22.

APPENDIX

WORKPLACE KNOW-HOW

The know-how identified by SCANS is made up of five competencies and a three-part foundation of skills and personal qualities needed for solid job performance. These include:

COMPETENCIES. Effective workers can productively use:

- *Resources: allocating time, money, materials, space, staff;*
- *Interpersonal Skills: working on teams, teaching others, serving customers, leading, negotiating, and working well with people from culturally diverse backgrounds;*
- *Information: acquiring and evaluating data, organizing and maintaining files, interpreting and communicating, and using computers to process information;*
- *Systems: understanding social, organizational, and technological systems, monitoring and correcting performance, and designing or improving systems;*
- *Technology: selecting equipment and tools, applying technology to specific tasks, and maintaining and troubleshooting technologies.*

THE FOUNDATION. Competence requires:

- *Basic Skills: reading, writing, arithmetic and mathematics, speaking and listening;*
- *Thinking Skills: thinking creatively, making decisions, solving problems, seeing things in the mind's eye, knowing how to learn, and reasoning;*
- *Personal Qualities: individual responsibility, self-esteem, sociability, self-management and integrity.*

EXHIBIT 1
Definitions: The Competencies

RESOURCES

Allocates Time. Selects relevant, goal-related activities, ranks them in order of importance, allocates time to activities, and understands, prepares, and follows schedules.

Examples:
- construct a timeline chart, e.g., Gantt, PERT;
- understand the concept of a critical path;
- estimate the time required to complete a project by task; or
- use computer software, e.g., Harvard Project Planner, to plan a project.

Allocates Money. Uses or prepares budgets, including cost and revenue forecasts; keeps detailed records to track budget performance; and makes appropriate adjustments.

Examples:
- estimate costs;
- prepare a multi-year budget using a spreadsheet; or
- do a cost analysis.

Allocates Material and Facility Resources. Acquires, stores, and distributes materials, supplies, parts, equipment, space, or final products in order to make the best use of them.

Examples:
- lay out a workspace document with narrative and graphics using desktop publishing software;
- demonstrate understanding of First In First Out (FIFO) and Just in Time (JIT) inventory systems; or
- design a request for proposal (RFP) process.

Allocates Human Resources. Assesses knowledge and skills and distributes work accordingly, evaluates performance, and provides feedback.

Examples:
- develop a staffing plan;
- write a job description; or
- conduct a performance evaluation.

EXHIBIT 1 (Continued)
Definitions: The Competencies

INFORMATION

Acquires and Evaluates Information. Identifies need for data, obtains it from existing sources or creates it, and evaluates its relevance and accuracy.

Examples:
- develop a form to collect data;
- research and collect data from appropriate sources (library, on-line data bases, field research); or
- develop validation instrument for determining accuracy of data collected.

Organizes and Maintains Information. Organizes, processes, and maintains written or computerized records and other forms of information in a systematic fashion.

Examples:
- develop a filing system for storing information (printed or computerized);
- develop an inventory record-keeping system; or
- develop a bill processing system.

Interprets and Communicates Information. Selects and analyzes information and communicates the results to others using oral, written, graphic, pictorial, or multi-media methods.

Examples:
- produce a report using graphics to interpret and illustrate associated narrative information;
- make an oral presentation using several different media to present information (overheads, slides, film, audio); or
- develop material for communicating information to be used during a teleconference call.

EXHIBIT 1 (Continued)
Definitions: The Competencies

Uses Computers to Process Information. Employs computers to acquire, organize, analyze, and communicate information.

Examples:
- use a computer spreadsheet, e.g., Lotus 1-2-3, to develop a budget;
- use a computer graphics program, e.g., Harvard Graphics, to prepare overheads for a report; or
- use on-line computer data bases, e.g., Lexus, New York Times, ERIC, to research a report.

INTERPERSONAL

Participates as a Member of a Team. Works cooperatively with others and contributes to group with ideas, suggestions, and effort.

Examples:
- collaborate with group members to solve a problem;
- develop strategies for accomplishing team objectives; or
- work through a group conflict situation.

Teaches Others. Helps others learn.

Examples:
- train a colleague on-the-job; or
- explore possible solutions to a problem in a formal group situation.

Serves Clients/Customers. Works and communicates with clients and customers to satisfy their expectations.

Examples:
- demonstrate an understanding of who the customer is in a work situation;
- deal with a dissatisfied customer in person; or
- respond to a telephone complaint about a product.

EXHIBIT 1 (Continued)
Definitions: The Competencies

Exercises Leadership. Communicates thoughts, feelings, and ideas to justify a position; and encourages, persuades, convinces, or otherwise motivates an individual or group, including responsibly challenging existing procedures, policies, or authority.

Examples:
- use specific team-building concepts to develop a work group;
- select and use an appropriate leadership style for different situations; or
- use effective delegation techniques.

Negotiates. Works towards an agreement that may involve exchanging specific resources or resolving divergent interests.

Examples:
- develop an action plan for negotiating;
- write strategies for negotiating; or
- conduct an individual and a team negotiation.

Works with Cultural Diversity. Works well with men and women and with a variety of ethnic, social, or educational backgrounds.

Examples:
- demonstrate an understanding of how people with differing cultural/ethnic backgrounds behave in various situations (work, public places, social gatherings); or
- demonstrate the use of positive techniques for resolving cultural/ethnic problem situations.

SYSTEMS

Understands Systems. Knows how social, organizational, and technological systems work and operates effectively within them.

Examples:
- draw and interpret an organizational chart;
- develop a chart that illustrates an understanding of stocks and flows; or
- draw a diagram that illustrates a technological problem definition and problem-solving process.

EXHIBIT 1 (Continued)
Definitions: The Competencies

Monitors and Corrects Performance. Distinguishes trends, predicts impact of actions on system operations, diagnoses deviations in the function of a system/organization, and takes necessary action to correct performance.

Examples:
- generate a statistical process control (SPC) chart;
- develop a forecasting model; or
- develop a monitoring process.

Improves and Designs Systems. Makes suggestions to modify existing systems to improve products or services, and develops new or alternative systems.

Examples:
- draw a diagram showing an improved organizational system based on Deming's 14 points; or
- choose a situation needing improvement, break it down, examine it, propose an improvement, and implement it.

TECHNOLOGY

Selects Technology. Judges which set of procedures, tools, or machines, including computers and their programs, will produce the desired results.

Example:
- read equipment descriptions and technical specifications to select equipment to meet needs.

Applies Technology to Task. Understands the overall intent and the proper procedures for setting up and operating machines, including computers and their programming systems.

Example:
- set up/assemble appropriate equipment from instructions.

Maintains and Troubleshoots Technology. Prevents, identifies, or solves problems in machines, computers, and other technologies.

Examples:
- read and follow instructions for troubleshooting and repairing relevant equipment; or
- read and follow maintenance instructions for keeping relevant equipment in good working order.

EXHIBIT 2
Assignments that Integrate the SCANS Competencies Into the Core Curriculum Area

	CURRICULUM AREA				
Competency	**English/Writing**	**Mathematics**	**Science**	**Social Studies/Geography**	**History**
Resources	Write a proposal for an after-school career lecture series that schedules speakers, coordinates audio-visual aids, and estimates costs.	Develop a monthly family budget, taking into account expenses and revenues, and--using information from the budget plan--schedule a vacation trip that stays within the resources available.	Plan the material and time requirements for a chemistry experiment, to be performed over a two-day period, that demonstrates a natural growth process in terms of resource needs.	Design a chart of resource needs for a community of African Zulus. Analyze the reasons why three major cities grew to their current size.	Study the Vietnam War, researching and making an oral presentation on the timing and logistics of transport of materials and troops to Vietnam and on the impact of the war on the Federal budget.
Interpersonal Skills	Discuss the pros and cons of the argument that Shakespeare's *Merchant of Venice* is a racist play and should be banned from the school curriculum.	Present the results of a survey to the class, and justify the use of specific statistics to analyze and represent the data.	Work in a group to design an experiment to analyze the lead content in the school's water. Teach the results to an elementary school class.	In front of a peer panel, debate whether to withdraw U.S. military support from Japan. Simulate urban planning exercise for Paris.	Study America's Constitution and roleplay negotiation of the wording of the free States/slave States clause by different signers.
Information	Identify and abstract passages from a novel to support an assertion about the values of a key character.	Design and carry out a survey, analyzing data in a spreadsheet program using algebraic formulas. Develop table and graphic display to communicate results.	In an entrepreneurship project, present statistical data on a high-tech company's production/sales. Use computer to develop statistical charts.	Using numerical data and charts, develop and present conclusions about the effects of economic conditions on the quality of life in several countries.	Research and present papers on effect of Industrial Revolution on class structure in Britain, citing data sources used in drawing conclusions.

	CURRICULUM AREA				
Competency	**English/Writing**	**Mathematics**	**Science**	**Social Studies/Geography**	**History**
Systems	Develop a computer model that analyzes the motivation of Shakespeare's *Hamlet*. Plot the events that increase or decrease Hamlet's motivation to avenge the death of his father by killing Claudius.	Develop a system to monitor and correct the heating/cooling process in a computer laboratory, using principles of statistical process control.	Build a model of human population growth that includes the impact of the amount of food available on birth and death rates, etc. Do the same for a growth model for insects.	Analyze the accumulation of capital in industrialized nations in systems terms (as a reinforcing process with stocks and flows).	Develop a model of the social forces that led to the American Revolution. Then explore the fit between that model and other revolutions.
Technology	Write an article showing the relationship between technology and the environment. Use word processing to write and edit papers after receiving teacher feedback.	Read manuals for several data-processing programs and write a memo recommending the best programs to handle a series of mathematical situations.	Calibrate a scale to weigh accurate portions of chemicals for an experiment. Trace the development of this technology from earliest uses to today.	Research and report on the development and functions of the seismograph and its role in earthquake prediction and detection.	Analyze the effects of wars on technological development. Use computer graphics to plot the relationship of the country's economic growth to periods of peace and war.

Year:

CityWorks Workforce Education Model
Program Worksheet

Program:
Entry-Level Jobs:
Partners:
Cluster:

LEARNING EXPERIENCES *Foundation Skills:*	PROPOSED ACTIVITY	STUDENT POPULATION (Check all that apply)				
		P	HS	R	U	E
School-based						
Work-based						
Career Counseling and Educational Planning						
Assessment / Credentials						

Student Population
P: Preparing for College-level Education
HS: Recent High School Graduate
R: Student Seeking Retraining
U: Student Seeking Upgrading
E: Entrepreneurial Student

Year:

CityWorks Workforce Education Model
Program Worksheet

Program:
Entry-Level Jobs:
Partners:
Cluster:

LEARNING EXPERIENCES *Core Competencies:*	PROPOSED ACTIVITY	STUDENT POPULATION (Check all that apply)				
		P	HS	R	U	E
School-based						
Work-based						
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Student Population

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CityWorks Workforce Education Model
Program Worksheet

Program:
Entry-Level Jobs:
Partners:
Cluster:

LEARNING EXPERIENCES ***Program Skills:***	**PROPOSED ACTIVITY**	**STUDENT POPULATION (Check all that apply)**				
		P	**HS**	**R**	**U**	**E**
School-based						
Work-based						
Career Counseling and Educational Planning						
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Student Population

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Year:

CityWorks Workforce Education Model
Program Worksheet

Program:
Entry-Level Jobs:
Partners:
Cluster:

CONNECTING ACTIVITIES	PROPOSED ACTIVITY	STUDENT POPULATION (Check all that apply)				
		P	HS	R	U	E
Work-based learning placements						
Mentoring						
Placement						
Follow-up						
Other						

Student Population

P: Preparing for College-level Education
HS: Recent High School Graduate
R: Student Seeking Retraining
U: Student Seeking Upgrading
E: Entrepreneurial Student

Glossary of Terms

Assessment is the process of measuring performance against a set of standards (through examination, practical tests, performance observation and/or the completion of portfolios of work and assignments).

Basic skills are essential academic and personal abilities that enable a person to succeed in school and the workplace. Traditionally referred to as the three R's-reading, writing, and arithmetic-in recent times both educators and employers have expanded the definition to include a number of cognitive and interpersonal abilities, including the capability to think and solve problems, communicate information in oral and written forms, work effectively alone and in teams, and take personal responsibility for one's self-development.

Career ladder The American economy is composed of a number of large sectors that each produce a unique set of goods and services. Within each industry area, there are a wide variety of entry-level, or more advanced career opportunities that require different responsibilities and different types of skills. Individuals typically enter their selected job at levels that correspond to their present knowledge and ability, and advance in their career by securing additional training and on-the-job experience over time.

Competency indicates the ability to perform the activities within an occupation to the set standards. It may incorporate the ability to apply the relevant skills and knowledge to new situations within the occupational area as well as generic skills.

Connecting activities are programmatic or human resources that are intended to help link school- and work-based educational programs as defined in the School-to Work opportunities Act. Connecting activities include: (1) matching students with work-based opportunities; (2) using school site mentors as liaisons between educators, business, parents, and community partners; (3) technical assistance to help employers and educators design comprehensive STW systems; (4) technical assistance to help teachers integrate school and work-based learning as well as academic and occupational subject matter; (5) encouraging active business involvement in school- and work-based activities; (6) assistance to STW completers to help them find appropriate work, continue their education or training, and link them to other community services; (7) evaluation of post-program outcomes to assess program success, particularly with reference to selected populations; and (8) linking existing youth development activities with employer and industry strategies to upgrade worker skills.

Cooperative education is a structured method of instruction whereby students alternate or parallel their high school or postsecondary studies, including required academic and vocational courses, with a job in a field related to their academic or occupational objectives. Students and participating businesses develop written training and evaluation plans to guide instruction, and students receive courses credit for both their classroom and work experiences. Credit hours and intensity of placements often vary with the course of study. Moreover, depending on the state, secondary and postsecondary cooperative education may or may not include paid work experiences. Since employers are subject to the Fair Labor Standards Act Child Labor Laws, programs must be designed to comply with federal and state child labor provisions.

Core competencies indicate capabilities for performing activities that are common across occupational areas and can be built upon during the course of a career.

Certification is the provision of a certificate or award to individuals, indicating the attainment or enhancement of a skill, certain skills or knowledge, usually as a result of a training system that features modular components that build upon one another, and a competency-based assessment process.

Dual enrollment is a program of study allowing high school students to earn credits toward a high school diploma and a postsecondary degree or certificate simultaneously. Written articulation agreements formalize course placements, the transfer of academic and vocational credits among institutions, and the role of secondary and postsecondary instructors.

Goals 2000 the goal 200 Act provides resources to states and communities to develop and implement educational reforms aimed at helping students master academic and occupational skill standards. By providing flexible and supportive options for coordinating, promoting and building a system of educational standards to improve education, the Act is intended to help make the Federal government a better partner in local and state comprehensive school improvement efforts.

High-performance workplace is one that empowers workers to participate and fully utilize their skills and knowledge. Such workplaces are characterized by flexible and decentralized production techniques; employee empowerment; a strong emphasis on continuously improving work performance; continual training to upgrade skills and employees' ability to function effectively in a problem-oriented

environment; and increasing integration of tasks through work teams and the identification of workers with their products and services.

Internships: For a specified period of time, students work for an employer to learn about a particular industry or occupation. Student's workplace activities may include special projects, a sample of tasks from different jobs, or tasks from a single occupation. May or may not include paid work experiences.

Job is defined as a set of tasks and duties executed, or meant to be executed, by one person.

Job shadowing: Typically as part of career exploration activities in early high school, a student follows an employee for one or more days or learn about a particular occupation or industry. Job shadowing is intended to help students home their career objectives and select a career major for the latter part of high school.

Mentoring: Pairing a student with an employee over an extended period of time during which the employee helps the student master certain skills and knowledge the employee possesses, models workplace behavior, challenges the student to perform well, and assesses the student's performance. Mentoring may be combined with other work-based learning activities, such as internships or on-the-job training.

Occupation is a set of jobs whose main tasks and duties are characterized by a high degree of similarity.

On-The-Job-Training: Through their jobs in the workplace, students receive hands-on training in specific occupational skills. A general term, "on-the-job training" is part of the activities described below (cooperative education, and youth and registered apprenticeship). May or may not include paid work experiences.

SCANS: The Secretary's Commission on Achieving Necessary Skills was convened in February 1990 to examine the demands of the work place and to determine whether the current and future workforce is capable of meeting those demands. The commission was directed to: (1) define the skills needed for employment; (2) propose acceptable levels in those skills: (3) suggest effective ways to assess proficiency; and (4) develop a strategy to disseminate the findings to the nation's schools businesses and homes.

Service Learning: Combines community service with a structured school-based opportunity for reflection about that service. Emphasizes the connections between service experiences and academic learning.

Skill is defined as the ability to carry out the tasks and duties of a given job. it has two dimensions: (a) *Skill level*--which is a function of the complexity and range of the tasks and duties involved; and (b) *Skill specialization*--defined by the field of knowledge required, the tools and machinery used, the materials worked on or with, as well as the kinds of goods and services produced.

Skill is a combination of perceptual, motor, manual, intellectual, and social abilities. The nature of tasks usually requires a combination of these and usually also requires a combination of cognitive and psychomotor functions together with appropriate knowledge. Skill is cumulative. It is built up gradually with repeated practice. It is also sequential in that each part is dependent of the previous part and influences the next.

Skill standard identifies the knowledge, skill and level of ability needed to perform a job satisfactorily. These standards may be specific to a given occupation, cross occupational lives or apply to groupings of occupations. This concept of skill standards can be tailored to any industry to reflect its particular needs and economic development.

Task is a discrete, identifiable and meaningful unit of work that is carried out by a job holder for a specific purpose leading to a specific outcome. The performance of a task requires the application of a skill.

Training providers include colleges, high schools, private training bodies and companies, equipment providers who include training as a part of the equipment implementation process, industry-based training and structured on-the-job training provided by employers.

Work-based Learning: Learning that takes place in the workplace. Work-based learning includes a number of different activities that can be arrayed along a continuum from shorter-term, introductory types of experience to longer-term, more intensive ones, including paid work experiences and formal training. Although work-based learning activities vary, they generally involve schools and employers working together to devise objectives and work tasks, and, sometimes, criteria for monitoring or assessing students.

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