

## Testimony by CTA Representative Mike Patterson before the Little Hoover Commission, April 26, 2007

Good afternoon. My name is Mike Patterson. I am representing Barbara E. Kerr and the 340,000 instructional personnel across the state in the California Teachers Association.

I would like to express my appreciation to the committee for seeking the perspective of a vocational technical education teacher.

I have taught for nineteen years at South Tahoe High School and Central Sierra Regional Occupational Program. My teaching load includes Automotive 1, Automotive 2, Small Engines, and Regional Occupational Program Auto.

I am also a regional vice-president for California Association for Career and Technical Education.

But most importantly, I am a product of our public schools who graduated high school and gained AA degrees at San Joaquin Delta College. The training I received allowed me to work as an auto mechanic and to earn ASE Master Automotive Technician certification. Later, I returned to CSU Chico to earn my degree and my teaching credentials. I hold a B.A. in Industrial Arts and am rated as a Highly Qualified Teacher.

It's important to recognize some important realities about the projected workforce our state needs. Experts assert that only 25% of the workforce will need college undergraduate degrees or postgraduate degrees. Another 10% will work in jobs that are unskilled and require high school diplomas or less. But the lion's share of the jobs – somewhere around 65% of them – will require high school degrees plus another one, two, or three years of training.

Experts have also pointed out that the skill set we are currently teaching in our K-12 schools does not have all of the instructional career components outlined in the state's new CTE framework. A focus on building careers is vital because current projections are that students will have on average 10 different careers in their working life – not 10 different jobs, but 10 different careers.

So, our challenges are large ones. How do we provide a quality vocational career education programs that prepare students for jobs in the real world, prepare them to pass the state's rigorous high school exit exam, and give them the sound academic foundation so that at a later time in life they can pursue higher education, should they decide to do so.

CTA believes:

- *Students deserve and require workforce preparation to enter the technical global economy.*

- *All students in the public school system should have access to career technical education programs which include proper counseling and guidance services.*
- *Career specialization education opportunities offered at postsecondary levels should lead students to advanced certification and appropriate degrees.*
- *Legislation and regulations must reflect the importance of integrating academics and career preparation to the extent possible.*

We have plenty of challenges.

We need teachers with skills to teach these students, and we need to revamp the credential program to recognize the vital skills that these persons would bring to the teaching profession.

We also need to expand the program and coordinate it in a realistic way. But we need to be very careful not to hold the 65% of our future workforce to university requirements that may impede their graduation and movement into the world of work.

We need to prepare students for jobs in burgeoning industries like medical technology, transportation technology, and computer technology.

It makes little sense to train a student with yesterday's tools for tomorrow's jobs. We need the funding to assure that the machinery, the computers, the software that we have in our career and technical education programs is the same that students will use on the job.

First and foremost, we need more funding that is targeted and directed to make strong career technical education programs that reflect the needs of the current workforce and the anticipated needs of the future workforce. This funding must not come at the expense of other ongoing K-12 and community college programs.

While funding for these programs should be part of the regular school calculations, most of the remaining CTE classes are funded by categorical sources, including the federal Carl D. Perkins Vocational and Technical Education Act – and those federal funds could be cut by as much as 44.3% by 2012. About 98% of those cuts would hit CTE programs that support secondary and community college CTE career training programs.

Instead of expanding these career and technical education programs, California has been cutting them back. An unintended consequence of high academic standards and the California High School Exit Exam has reduced the focus on the benefits provided by career and technical education.

About 75% of high school technology programs have disappeared since the early 1980s. The State Department of Education reports that the number of CTE high school courses has declined from 40,000 in the late 1980s to about 24,000 in 2005-2006.

Since 1950, 75% of high school industrial arts programs have been eliminated as have about 90% of exploratory industrial arts programs in junior high schools. Only three college campuses offer teacher credential programs in Industrial Arts.

Ironically, research indicates that Career Technical Education may be an important pathway to better academic performance and a tonic for the state's dropout rate. In fact, career and technical education provide a reason for many students who are currently dropping out to stay in school. These programs are important because they keep students in school and because they provide students with a marketable skill.

Some 65% of career and technical education students maintain grade point averages of 2.5 or higher. About 95% graduate from high school. After a one-year period, at-risk students boosted their GPAs from 1.2 to 2.3 after participating in career and technical education programs.

What is the secret for creating 21st Century Education – a school curriculum that balances academic achievement with a rich selection of career technical education (CTE) courses? Both hands-on and brains-on education should be valued. Career technical and academic programs should complement rather than conflict with each other.

Throughout California, schools are working to achieve this blend of career and technical classes and core subjects. The integration of career technical courses with core academic classes requires stakeholders to consider several critical questions:

1. Do the curriculum demands (concentration on the A-G college entrance requirements) at the high school level restrict student access to career technical education (CTE) programs?
2. Has the elimination of career and technical education courses at the middle school and high school levels impacted the high school drop-out rate?
3. Should the A-G requirements be expanded to include career and technical education courses that meet "rigorous academic standards"?
4. Is it in the interest of the citizens and students of California to require that the primary focus of the public school system be the preparation of all students for entrance to the California university system?
5. Should career and technical education courses be required for graduation from high school?
6. Does the California State University system have the capacity to provide credential programs for new career and technical education teachers?
7. Does the present emphasis on "remedial" classes to raise the school's test scores eliminate the opportunity of students to take career and technical education courses?
8. If the restoration of career and technical education is important, how will the state provide the funding to restore or replace facilities for career and technical education programs?
9. Should college-bound students have the opportunity to take career and technical education courses?

10. Should California support a career and technical education system that is articulated with the Adult Education, Regional Occupation Programs and the California Community College System?

A collaborative effort should be established and maintained among local schools, private employers, and policy committees to meet specific job and employment training needs. The California Teachers Association believes three bold steps can restore the balance – and perhaps tip the scales to the advantage of schools and students:

- Expand the availability of CTE courses and ensure the students receive a rigorous curriculum, provided in a sequence of courses which prepare them for career or higher education. Support innovation by expanding the Academy Partnership Grants.
- Increase the pool of available teachers, particularly from industry with recent experience, who can provide instruction in the latest technical programs.
- Create new, intense and rapid alternative certification programs to help them translate existing skills into classroom skills and provide an experienced teacher as a mentor.

The essence of it is that we are not looking at going back to the past. What we are looking at is moving forward to a future. Our career and technical education programs need to be state of the art and aimed at the industrial demand that is there.

Among these materials I am leaving with you today is a copy of CTA's White Paper on Career and Technical Education. It will spell out CTA's policies in detail and provide you with additional information about our perspective on this important issue.

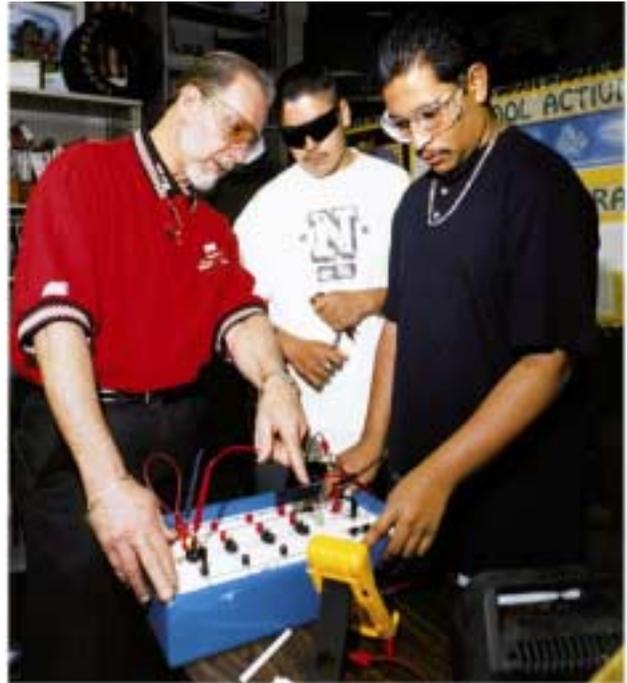
Thank you.

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## 21<sup>st</sup> Century Education for 21<sup>st</sup> Century Jobs

### CTA believes

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Teacher Phillip Jelinek and students in auto mechanics class, Monrovia High School. From *The California Educator*, Vol. 6, Issue 9, June, 2002.

California workers have created one of the world's largest economic juggernauts. Each year the state's education system must graduate new workers who will compete in a high technology world that requires a new set of skills for new opportunities. A dynamic economy is much more than the sum of its test scores. It's part of a culture that rewards innovation and risk-taking, and values unconventional problem-solving. Much of this is nurtured in our schools, even if it can't be quantified on a test.

What is the secret for creating 21<sup>st</sup> Century Education – a school curriculum that balances academic achievement with a rich selection of career technical education (CTE) courses? Both hands-on and brains-on education should be valued. Career technical and academic programs should complement rather than conflict with each other.

### **Critical Policy Implications**

Briggs and Stratton<sup>®</sup>, produces twelve million engines each year, and employs approximately 60,000 dealers nationwide. Those dealers are supported by technicians who can explain why a capacitor is needed across the points; why there is a gap in the laminations of a magneto coil to ensure proper magnetic flux flow; and what is the ratio of turns in a magneto coil to achieve a 10,000 volt spark to jump across the .035 inch gap of a spark plug. So, where are the high quality high school programs that will create these high quality techs?

<b>Schools need to graduate students who can:</b>	<b>Employers need workers to enter the workforce who can:</b>
<ul style="list-style-type: none"> <li>• manipulate measurements and know that there are 12 inches in a foot.</li> <li>• add, subtract, and divide fractions and decimals.</li> <li>• define concepts of perpendicular, radius and diameter, tangential relationships between circles and straight lines, and angular measurement.</li> <li>• recite the Pythagorean Theorem and solve simultaneous quadratic equations to find the radius of an arc.</li> <li>• recite or recognize Bernoulli’s principle.</li> <li>• describe the effect of magnetic lines of flux and magnetic fields on a copper wire.</li> <li>• calculate the volumes of cylinders (taught in first year Algebra).</li> </ul>	<ul style="list-style-type: none"> <li>• machine a part to within a .001 of an inch or understand that a piece of wood that is one foot square and one inch thick is a board foot.</li> <li>• read and measure using architectural, mechanical, and metric scales.</li> <li>• become fluent in the language of drafting and facile in the use of drafting tools.</li> <li>• apply the Pythagorean Theorem and solve simultaneous quadratic equations to find the radius of an arc.</li> <li>• apply Bernoulli’s principle to repair or build a carburetor.</li> <li>• use magnetos to design, repair or install an internal combustion engine for small aircraft or lawnmowers.</li> <li>• apply first year algebra principles to calculate compression ratios for engine displacements (involves volumetric measurements of cylinders).</li> </ul>

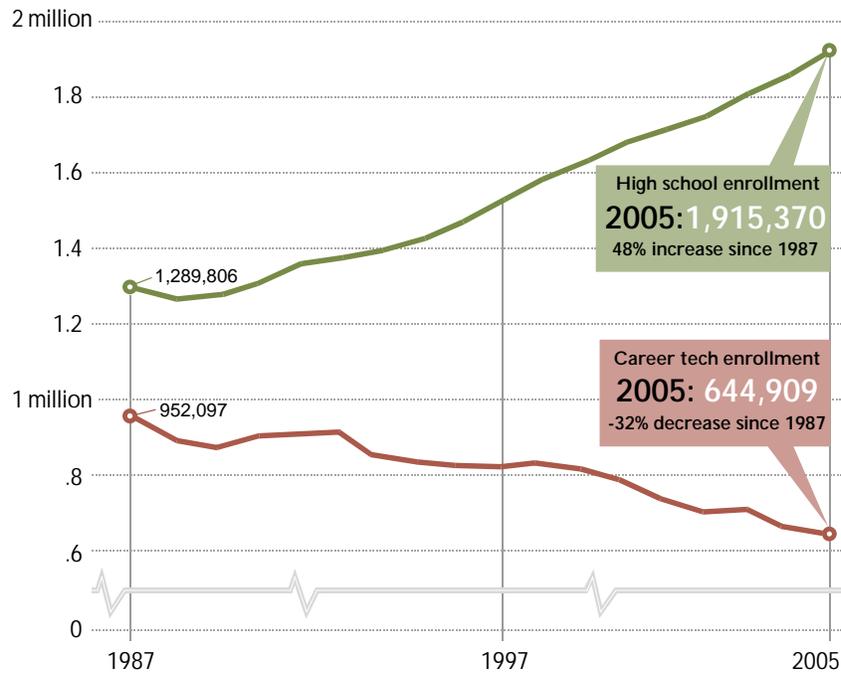
Throughout California, schools are working to achieve this blend of career and technical classes and core subjects. The integration of career technical courses with core academic classes requires stakeholders to consider several critical questions:

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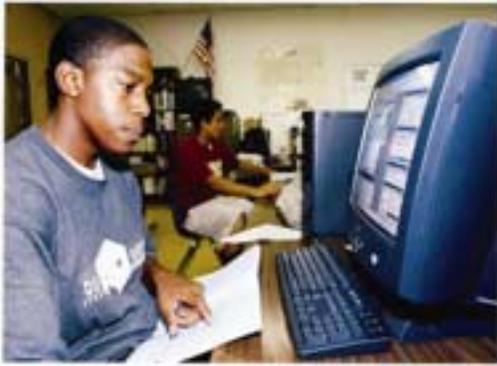
## Losing Ground

### California career tech education enrollment declines while high school enrollment increases



Source: California Basic Educational Data System (CBEDS)

- Three-quarters of high school technology education programs have disappeared since the early 1980s, according to the California Industrial and Technology Education Association. As a result, the California Department of Education reports the number of high school courses offered has dropped from about 40,000 in the late 1980s to 24,000 in 2005-06.
- In California, from 1950 to 2004, schools eliminated 75% of the Industrial Arts programs in our high schools and nearly 90% of the exploratory industrial arts programs in our junior high schools.
- Only three California State University campuses offer a teaching credential program for Industrial Arts.



A student works on his word processing skills at Monrovia High School. From *The California Educator*, Vol. 6, Issue 9, June, 2002.

The decline of CTE in our public schools is not a myth. California high school students today face enormous pressure including the highest academic standards in the country. Standards based instruction and the high school exit exam have raised the bar for all students. An unintended consequence of high academic standards has been less attention to the benefits of career and technical education. While auto shop classes once thrived in California, they are now on the endangered species list as schools focus mostly on academics, test scores, and college preparatory courses.

The efforts to resuscitate even a semblance of the programs that existed 30 years ago will require a clear understanding of the architecture of the state's workforce pipeline. Students who purposefully choose to enter the workforce after high school have the right to have access to meaningful, rich and diverse school experiences that will result in workforce readiness; employers have the right to expect balance between the school's responsibility for preparing students to enter the workforce and their own responsibility to manage the training and growth of new employees.

Research findings about the benefits of CTE programs are now the conventional wisdom of any conversation on the topic:

- Sixty-five percent of career and technical education students have a GPA of 2.5 or higher, and 95 percent graduate from high school, lowering the drop-out rate.
- Students are motivated to learn and reach for higher academic standards because they see the relevancy of their studies and make connections to their career interests.
- Over a one-year period, at-risk students showed an average GPA increase from 1.2 to 2.3 after participating in a CTE program.
- Involvement in CTE classes increases the chances of a student pursuing higher education.

### **Declining Funding**

Middle schools and high schools offer traditional career technical education classes with certified teachers. Traditional career technical education classes prepare students for entry level jobs, apprenticeships, trade schools or other training programs.

These beginning classes should have been funded by school districts; instead, these programs are primarily funded by other categorical sources including federal funding from the Carl D. Perkins Vocational and Technical Education Act. The district funded feeder classes could prepare students for advanced Regional Occupational Program (ROP) classes funded by counties. As cuts to fund the feeder programs continued throughout the 1970s, ROP picked up the slack, a trend that has been exacerbated over the years. Today, it is common for ROP courses to teach

introductory classes, because there is no other option. Even though ROP has filled the void, it may not be able to do so forever.

Proposed federal cuts will affect education programs in California. Specifically, proposals to fund CTE and adult education could be cut by \$471.8 million between FFY 2008 and 2012 and by \$100.9 million (44.3 percent) in 2012 alone as compared to 2007, after adjusting for inflation. Nearly all of the cuts – 98 percent of the total – would occur in CTE programs that support secondary school and community college career training programs. Although the federal funding should be used as supplemental money for CTE programs in California, these programs have *never* received sufficient funding to sustain them..

### **Restoring Balance**

The scope of CTE programs must include a systematic sequence of learning experiences which provide individuals with the necessary skills, knowledge, and attitudes to attain entry level employment, occupational advancement, upgrading or career change. A meaningful educational program must include both academic and CTE programs that complement and strengthen each other.



Students learn how to maintain computer networks in a Cisco certification program at Fairfield High School. From *The California Educator*, Vol. 6, Issue 9, June, 2002.

- All students in the public school system should have access to CTE programs which include proper counseling and guidance services.
- Preparation should be initiated in the elementary grades by infusing career awareness across the curriculum.
- Career exploration and training opportunities must be offered and expanded as students move through middle and secondary grade levels.
- Finally, a rich educational experience must be linked to financial and professional incentives that will motivate a segment of the workforce to return to the classroom as instructors.

A collaborative effort should be established and maintained among local schools, private employers, and policy committees to meet specific job and employment training needs. The California Teachers Association believes three bold steps can restore the balance – and perhaps tip the scales to the advantage of schools and students:

- Expand the availability of CTE courses and ensure the students receive a rigorous curriculum, provided in a sequence of courses which prepare them for career or higher education. Support innovation by expanding the Academy Partnership Grants.
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