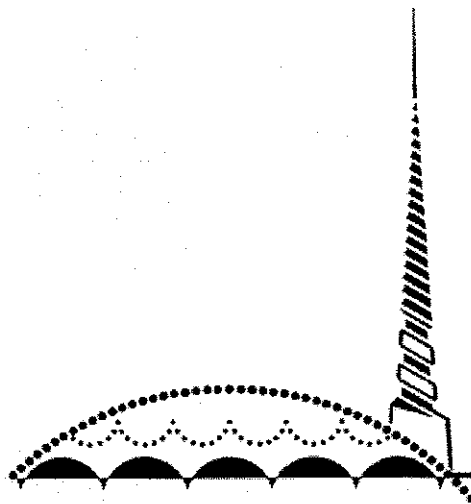

2006-2007 MARIN COUNTY GRAND JURY

CAREER TECHNICAL EDUCATION: MARIN'S BEST-KEPT SECRET

Date of Report: June 26, 2007



Marin County Grand Jury



CAREER TECHNICAL EDUCATION: MARIN'S BEST-KEPT SECRET

SUMMARY

Career technical education (sometimes called vocational education) has always played a preeminent role in preparing students for productive and meaningful careers. Today with the dramatic technological changes in business and industry, some leaders question the need for all students to spend four years studying academic subjects in our universities when needs in the workforce are increasing for trained technicians and skilled craftsmen. California law mandates affordable and accessible career technical education programs for students 16 years and older, and for adults. Marin County offers two pathways to careers in business and industry. One is called Regional Occupation Program (ROP) and the other is School to Career (STC).

When the Grand Jury looked into what the Marin County Office of Education is doing to provide vocational classes, it found a well-organized comprehensive series of courses:

- In 2005-06, around 2,500 Marin students attended ROP, designed to teach job skills using core academic subjects with hands-on-learning situations in specific industry sectors. High school students accounted for 78% of attendance and adults for the remaining 22%.
- During 2005-2006, STC provided career awareness programs for over 3,000 Marin students by allowing them to work in local businesses after school, on weekends, and in summer internships.

It has not always been an easy pathway to a career in business or industry. Twenty years ago, in 1984 and 1987 when the Grand Jury looked into ROP offered in Marin high schools, it found serious deficiencies in the administration of the programs, low morale among teachers, and a shortage of counselors. Then as now, secondary education was designed to separate academic students from vocational students, the head from the hand, knowing from doing, and the abstract from the applied.

Today, courses in Marin are meeting or surpassing California's State Career Technical Education model curriculum standards. The budget is just adequate at the present time,

though teachers and department heads regularly write grants to improve or update class offerings. Vocational education classrooms and workshops are modern with up-to-date equipment and facilities. Administrators are involved in these programs daily, and are capable and supportive. The teachers are well trained, experienced and dedicated to educating their students for jobs in California's increasingly technical workforce. Each high school has a College and Career Center which offers counseling to students, whether college or workforce bound.

The Grand Jury questioned students, teachers, and business leaders and found them to be enthusiastic about ROP and STC programs. Teachers and administrators have seen students' negative attitudes about education change after taking ROP classes. Some students report they were tempted to drop out, but remained in school because they could see a pathway to a career and a better life. Students, whether or not college bound, believe they profited by hands-on learning.

According to recent studies, ROP graduates generally command higher hourly wages, pay raises and job promotion rates than other high school graduates. Students who participate in ROP show marked improvement in school, and in careers once they graduate.

ROP teachers expressed concerns about a lack of publicity for the benefits of ROP/STC in Marin, and that people in Marin negatively perceive vocational education.

The good news about career technical education programs in Marin needs to reach a wider audience. The purpose of this report is to provide that comprehensive information about Marin's ROP and STC programs to the public.

The Grand Jury believes that the Marin County Office of Education should develop a strategic plan for administrators, principals, teachers, counselors, and community business leaders to get more information out to parents, students and the public about the benefits of ROP and STC programs for today's students, whether college bound or seeking a full-time job immediately after high school.

BACKGROUND

We live in a rapidly changing, highly competitive global economy. How do our workers get the education, technical skills and workplace experience they need to prepare them for new jobs coming onto the market?

Under the California Education Code, each high school district is required to offer a course of study leading to admission to the University of California or a California state college, as well as a program leading to employment in business or industry. It mandates that this state-wide vocational training program be available to all residents 16 years and older. The Code encourages rigorous academic curricula for both the college-bound student and the student interested in finding a full-time job.

Government Funding

The federal government jump-started career technical education in 1990 by enacting the Carl Perkins Act of 1990, which: (1) integrates career technical education and academic curricula; and (2) provides funding to strengthen and improve career technical education. This has helped the Marin County Office of Education by providing additional funds for its ROP. (See Appendix A for more information on the History of ROP/STC Funding.)

Governor Schwarzenegger and the California legislature have recognized that our state's high-tech economy needs well-trained workers, and has provided new funds for vocational programs. Governor Schwarzenegger's proposed 2007-2008 budget includes \$52 million to improve career technical education by enhancing curricula and increasing efforts to recruit and train vocational education teachers. Twenty million dollars of this allocation will revise vocational coursework through partnerships between high schools and community colleges.

In November 2006, California voters approved Proposition 1D, which authorizes \$500 million to modernize and construct career technical educational facilities. With approximately one-third of high school students dropping out of traditional academic programs in California schools, educators hope these upgraded programs and facilities will attract and retain more students.

Integration of Core Curriculum into Career Technical Education

For many years public education veered away from career technical education, concentrating on preparing students for college. Today, with a demand for a skilled workforce and the pay that goes with it, "career tech" has been recast. Hands-on learning is important for all students, whether looking for a full-time job or college bound.

"Reading, 'riting and 'rithmetic" are not the only three "Rs" being taught in California high schools. Rigor, relevance and relationships are the hot buzzwords in Sacramento and in classrooms across the state. Rigor for the curriculum, relevance to the workplace and relationships with teachers and business contacts comprise the three "Rs" of career technical education.

The California State Career Technical Education model curriculum, which is a state-approved curriculum updated on a regular basis, has undergone rigorous review and editing at every step of the development process, ensuring that information is accurate and relevant to the field. The new approach uses standards from core classes, such as math and science, to provide the rigor needed for students either to enter the workforce or continue their studies.

Career technical education is also focused on local business relationships. Standards specify the procedures and skills students will learn through hands-on activities and conceptual understanding at local businesses. The desired result is that students will be able to apply academic and technical knowledge in real-world settings, such as labs, workshops, and work-based learning environments, as well as in preparation for post-secondary education.

Regional Occupation Programs (ROP) in Marin

In Marin County during 2006-07, there were 32 ROP classes offered at 21 sites, primarily in high schools. ROP is a skills program, funded by Average Daily Attendance (ADA)¹ and grants. Over 2,500 students were served in 2005-06. High school students comprise around 78% of those attending ROP classes; adults the remaining 22%. The program is flexible, using what is called an "Open Entry/Open Exit" admission policy (which allows flexible entry and exit points throughout the school year).

ROP is project-based and courses may be taken in consecutive semesters. Programs in Marin are aligned with the California State Career Technical Education model curriculum. Standards are developed for: (1) the program or industry area; (2) the employability skills and knowledge recommended by the Secretary of Education's Commission of Achieving Necessary Skills; and (3) core academic content. A comprehensive assessment system is used to measure student competency in the application of career technical education, as well as the academic knowledge and skills required in the program area.

Today, Marin schools offer five of the 15 statewide career pathways, courses in which they can use academically-acquired knowledge while learning technical skills in real-world settings, such as labs, workshops and work-based learning environments. These career pathways are:

- arts and communications - computer graphics;
- multimedia, radio and television occupations;
- business and marketing - office technology, accounting and web-page design;
- health and bioscience - certified nurse assistant, certified home health care aide, sports fitness and coaching, cosmetology, culinary occupations, catering, fashion design, and teaching; and
- technology and engineering - automotive technology, welding, construction technology, architecture, and drafting design.

School to Careers (STC) Program

A parallel development to ROP in Marin has been the implementation of STC, in which participation in ROP classes leads to training in the workplace after school, on weekends,

¹ADA is a California State formula for funding schools based on the average daily attendance of students in school programs.

and in summer internships. STC started in 1997, when the Marin County Office of Education received one of 60 grants from the federal government (\$600,000 for four years) plus an additional \$1.3 million from the Marin Community Foundation. Other grants have followed in subsequent years from potential employers, such as Kaiser Permanente and Pacific Gas and Electric. Teachers and department heads regularly write grants to improve or update STC.

STC is a work program which combines school-based learning with work-based learning. It connects educators and employers to provide career exploration through internships and job shadows.² During 2005-2006, STC provided career awareness programs for over 3,000 Marin students by allowing them to work in local businesses.

The STC program partners with more than 250 Marin county businesses who welcome students to their job sites for work-based learning. A random list of some of the 250 employers include: Ace Aviation, American Red Cross, Bank of Marin, Buck Center on Aging, Marin Cities and the County, Embassy Suites, Family Law Center, Film Institute of Northern California, George Lucas Education Foundation, K101, Larkspur Police, Marin Builders Exchange, Marin General Hospital, Marin IJ, National Park Service, Novato Community Hospital, Visionary Media, Wildcare, YMCA and YWCA.

Business leaders also participate on advisory boards and on curriculum development panels. The focus is on providing career exploration, new career pathways, and work-based learning projects for students. In this way, employers are taking an active role in preparing their workforce for the challenging jobs of tomorrow.

Grand Jury Reports in 1984 and 1987 critical of ROP

Grand Jury Reports in 1984 and 1987 were highly critical of Marin's ROP, finding serious deficiencies in the administration of the programs, low morale among teachers, and a shortage of counselors. The current Grand Jury decided to review the ROP to determine if similar problems still exist. It also decided to look at the STC program (established in 1997) because it had never been reviewed by the Grand Jury.

METHODOLOGY

The Grand Jury did the following:

- Interviewed students, teachers, and employers, all of whom were actively involved in ROP and/or STC classes or work-related projects.

² In an internship, a student is matched with local employers for a summer or semester-long workplace learning opportunity. Academic credit can be received for this activity. A job shadow is an opportunity for students to spend a half day with professionals in a field of interest to observe and make inquiries.

- Visited 12 ROP classrooms in six Marin high schools. (See Appendix B for a description of some of the facilities and activities observed.)
- Sent questionnaires to 32 ROP teachers and received 31 responses. The questionnaire requested information about: (1) class size, (2) managing the Open Entry/ Open Exit policy, (3) support provided by the administration and employers, (4) necessary equipment and materials, (5) oversight by advisory committees, employers in the industry, and boards of education, (6) student responses and involvement, (7) the availability of counseling, and (8) teachers' opinions of the ROP and STC programs. (See Appendix C for ROP teachers' quotes and a list of questions.)
- Reviewed the California Education Code and reports on California Career Technical Education Model Standards Update (September 29, 2004), The School Accountability Report Card (2005-06) and (2006-07) as well as the Senate Education Hearing on California Career Technical Education, January 18, 2006, and the Marin 2005-2006 County Office of Education Budget for ROP.

Interesting materials were found on the Internet: The California Regional Occupation Centers and Programs (ROCP) 2006 Longitudinal Study Technical Report, U.C. Riverside by Dr. Doug Mitchell, and the California Department of Education News Release by Jack O'Connell, State Superintendent of Public Instruction.

The Grand Jury also reviewed two previous Grand Jury reports on ROP published in 1984 and 1987.

DISCUSSION

Can a case be made for career technical education in Marin?

Approximately 95% of Marin high school students, urged by their parents and teachers, sign up for academic courses which will prepare them for admission to a four-year university. Recent research has shown that nationally as many as 50% of high school students lack the ability to master all the skills required to go to a four-year university. Many others lack the financial resources to attend college, as costs continue to spiral upward. Tuition and fees at colleges and universities have risen 34-52% (after inflation) between 1995 and 2006. The average college student graduates with \$17,500 in loan debt, an amount which has more than doubled from just a decade before.

Students can get well-paying jobs without a four-year degree. For example, an auto-shop student can make \$35,000-\$40,000 a year out of high school, and possibly \$100,000 or more annually by the time his former classmates graduate from a four-year college. Research has shown that "In addition to commanding higher hourly wages, ROP graduates generally report pay raises and job promotion rates higher than other high

school graduates.”³ The Grand Jury believes the case has been made for strong career technical education programs in Marin schools and wonders why there is not more publicity or emphasis on these opportunities.

Does ROP produce good results?

A recent study⁴ found that students who participate in ROP show marked improvement in school and career once they graduate. Some with prior poor attendance records and little interest in class assignments became motivated to learn and excelled in technical and career-oriented classes. Marin ROP teachers reported that students' behavior and attendance often improved after beginning ROP and STC classes. This was true whether the student was college-bound or training for a full-time job after high school.

All over California as well as in Marin, these programs are integrating academic and vocational education, encouraging students to use both their minds and their hands to achieve career and educational goals.

What did the Grand Jury find in Marin?

Tours of various ROP facilities and interviews with students, teachers, administrators, and employers revealed that all are working hard to achieve their goals. These programs are well organized and stimulating, teaching skills that prepare students for careers and for life.

When the Grand Jury visited 12 ROP classrooms, it found them to be well equipped with state-of-the-art equipment. Capable teachers stimulated and challenged students with innovative projects that demanded creative solutions. The classes and equipment are changed as technology changes. (See Appendix B for a description of some of the facilities and activities observed.)

These classes use student knowledge already acquired in math, science, history, and English. Students learn how to write and develop a business plan, organize a Power-Point® presentation, design a house or a robot, create a new recipe, or perhaps a new fashion design. Students are enthusiastic about their class work and proud of what they have achieved.

ROP classes are not just helpful for those students seeking immediate employment after high school. The Grand Jury observed college-bound engineering students building

³ Dr. Doug Mitchell, “The California Regional Occupation Centers and Programs (ROCP) 2006 Longitudinal Study Technical Report,” U.C. Riverside. ROP students in this study consisted of both those bound for four-year universities and those seeking immediate full-time employment after high school.

⁴ Mitchell, ROCP.

robots in ROP classes and learned that some students graduating with ROP classes are accepted into highly-regarded academic institutions. For example, one former ROP engineering student will be a junior at MIT this fall. Another graduated this spring from Olin College (a new, highly-regarded engineering college in Massachusetts), and a third will attend Olin in the fall.

The teachers and administrators are highly-skilled professionals, well informed about the needs of the students and the subject areas in which they work. Employers willingly contribute time and expertise to help train student workers for business and industry.

Those involved in career technical education believe the classes empower students by connecting them to community businesses and to real life outside of school. Teachers and administrators have seen students' negative attitudes about education change. Some students report they were tempted to drop out, but remained in school because they could see a pathway to a career and a better life.

How do ROP teachers feel about ROP/STC?

In responses to a Grand Jury questionnaire (see Appendix C), ROP teachers revealed positive results, as follows:

- Enthusiastically describing the benefits of career technical education for their students;
- Noting students, whether or not college bound, profit by hands-on learning;
- Stating the application of what students learn in real jobs is rewarding and motivating;
- Demonstrating students become eager self-sufficient learners, trying different jobs and discovering where their interests lie; and
- Indicating financial support for ROP/STC appears just adequate at the present time.

Two related concerns expressed by ROP teachers in the questionnaire are summarized below:

- **Inadequate Publicity:** The benefits of ROP/STC are not well known, one teacher calling it Marin's "best kept secret." It was felt key individuals such as administrators, counselors, principals, and teachers all need to do more to inform parents, students, and the public about the benefits of vocational education.
- **Negative Perceptions:** Many people in Marin tend to "look down on" vocational education, viewing it as something students are pushed into when failing or bored by core academic subjects. This prejudice against vocational education needs to be overcome.

See Appendix C for a list of some ROP teachers' quotes from the questionnaire.

What grade should the Marin County Office of Education get for its ROP/STC Programs?

The answer is an "A+." There is a very capable, supportive administration in the Marin County Office of Education. The directors of ROP and STC are in daily or weekly contact with, and responsive to, ROP teachers' needs. Administrators from the Marin County Office of Education visit ROP classes regularly. The budget for ROP and STC programs appears adequate. The Grand Jury found few complaints about ROP/STC from students, parents or teachers.

What needs to be done in Marin?

The Grand Jury found a need to spread the word to Marin residents about the county's ROP/STC programs. Administrators, principals, teachers, counselors as well as community business leaders need to get more information out to the public about the benefits of ROP/STC for today's students, whether college bound or seeking a full-time job immediately after high school. In light of the benefits attributed to ROP/STC and the professional administration of these programs by the Marin County Office of Education, there is no need for Marin to keep it a secret any longer.

CONCLUSIONS

The Grand Jury believes that Marin County high schools offer comprehensive career technical education programs, and that Marin's ROP and STC classes meet California State Career Technical Education model curriculum standards. Many employers in Marin provide advice, support and training for students in their workplaces and there are few complaints from students, parents or teachers about ROP/STC. Financial support for ROP and STC appears just adequate at the present time. Students, teachers, and employers are enthusiastic about the ROP and STC programs. An area of concern for ROP teachers is inadequate publicity for ROP and STC in Marin. More wide-spread knowledge about the benefits of these programs would help overcome negative perceptions in the community.

The Grand Jury believes that the Marin County Office of Education should develop a strategic plan for administrators, principals, teachers, and counselors as well as community business leaders to get more information out to parents, students, and the public about the benefits of ROP/STC for today's students, whether college bound or seeking a full-time job immediately after high school.

Reports issued by the Civil Grand Jury do not identify individuals interviewed. Penal Code Section 929 requires that reports of the Grand Jury not contain the name of any person, or facts leading to the identity of any person who provides information to the Civil Grand Jury. The California State Legislature has stated that it intends the provisions of Penal Code Section 929 prohibiting disclosure of witness identities to encourage full candor in testimony in Civil Grand Jury investigations by protecting the privacy and confidentiality of those who participate in any Civil Grand Jury investigation.

BIBLIOGRAPHY

Dr. Doug Mitchell, "The California Regional Occupation Centers and Programs (ROCP) 2006 Longitudinal Study Technical Report," U.C. Riverside.

APPENDIX A

A History of Funding For ROP and STC

In 1917, the federal government began funding vocational education as a separate track from the academic path to college. Expansion of vocational education occurred from 1936 into the 1970s. Five subject areas evolved: Agriculture, Trade and Industrial, Home Economics, Health, and Business.

In 1968 Regional Occupation Centers and Programs were initiated.

In 1983, the Hughes-Hart Reform Act renewed interest in and emphasis on academic and college preparatory programs. (The result was a huge decline in vocational education offerings.)

The Carl D. Perkins Act of 1990 integrated vocational education and academic curricula.

The Secretary of Education's Commission of Achieving Necessary Skills Commission, 1991-1992, published a document on the skills and knowledge that all students need to acquire, thereby establishing certain curriculum standards.

In 1992, career technical education standards, required by the California Legislature, were approved.

The Carl D. Perkins Act of 1998 provided funds for ROP and STC, and also set standards for academic and career performance. This Act also required local control and documentation of student achievements and outcomes.

In Marin County, ROP and STC are funded by ADA and numerous grants, including the 1998 Perkins Act, mentioned above. State funding for ROP was \$2,716,319 for 2005-2006.

Proposition 1D, approved by the California voters in November 2006, provides \$500 million for the construction of new career technical education facilities and for modernization of existing facilities. To obtain such funds, local educational agencies must submit applications to the California Department of Education.

APPENDIX B

Tour Description: ROP Facilities and Activities

The Grand Jury visited six high schools and twelve classrooms in spring, 2007. The following is a description of some of the facilities and activities observed.

In architectural design, students made two- and three-dimensional house plans on up-to-date computers. After completing the design, they made actual models from poster board. They learned to work in teams of two or three.

The students in the engineering program worked on three projects during the year:

- The students designed and constructed a model bridge, learning how to use design and stress calculations.
- The students designed and built a small robot which contained a radio- controlled motor as well as a small sound system which played a tune on demand by the operator.
- The class built a human-powered vehicle using donated materials. They learned to cut the steel for the frame, weld the parts to the chassis, and assemble and attach a bicycle suspension, steering assembly and drive train with multiple speed gear ratios including a shifting mechanism. The students ran the vehicle on an oval track and had to complete the ¼ mile distance in less than four minutes. They were also required to navigate successfully the vehicle through a figure-eight course.

Auto technology is housed in a modern building. Ten Chevrolet engines are there for students to take apart and re-assemble. There are two hoists and appropriate tools, as well as six to eight cars needing repair. Metal work and welding is also taught.

Culinary arts and gourmet catering are taught in a modern kitchen classroom with both gas and electric stoves, sinks, refrigerators and other essentials. Students work in teams preparing food and learning how to run their own business, as they gain professional experience. There is a demonstration area where each student does a food presentation which is videotaped as a required class project.

Fashion design is adjacent to culinary arts, and is also a very modern facility. It is equipped with twenty or more sewing machines, cutting tables, fabrics, and manikins. Each student learns to design, sew and re-style clothing, to study and analyze fashion trends, and to plan and present a fashion show.

A multi-media technology and web-page design classroom uses cameras and computers as students learn graphics, sound, video animation, and virtual reality. This project-based course includes Power-Point® presentations, creating a web page, newsletters, resumes, business applications, computer imaging, videos, and movies. One team will write, act in, direct, and produce its own movie.

Business technology is primarily a class for adults. This program, housed in a classroom equipped with more than thirty computers, offers job training for a variety of basic office skills. Here the Grand Jury saw the "Open Entry/Open Exit" policy in action. Students arrive, sign in and start to work. Some are on Level 1, basic computer skills. Others are on Level 2, which can include Microsoft Office, Word, Excel, Power-Point®, etc. Students leave when they have finished an assignment or have an appointment or job. The teacher, who gives each student a personal introduction to the process when they start, is there with an assistant to offer help as needed.

APPENDIX C

Questionnaire: ROP Teachers' Quotes and List of Questions

ROP TEACHERS' QUOTES

History shows the need for vocational education regardless of changing social or political trends. Thank goodness ROP came around about 35 years ago so we still have these skills-training programs, while other vocational or industrial arts programs have almost disappeared.

ROP helps students learn life skills. They can learn to do a business plan and to accept supervision. It prepares students for employment with real-life experiences.

My student population is predominately at-risk and it is very rewarding and gratifying to observe the personal empowerment and increased self-esteem that results from participation in our internship.

ROP needs more outreach from school counselors to inform parents about the benefits of vocational education.

Students learn to work in groups and when and how to delegate. They learn effective communication skills.

That ROP is Marin's best kept secret is usually followed by a student comment: "I wish I had known about this program earlier."

Shop, vocational education, and career technical education is looked down on in our community. This community should be informed that it is necessary for all students to develop hands on skills.

Students have opportunities in ROP classes to get real-life experiences and career training. For some students who have difficulties mastering "other" classes, these classes provide a pathway to a possible future.

ROP administrators need to communicate with on-site counselors so that they can help teachers promote their programs.

Engineering class offers students a unique opportunity to design solutions to engineering problems, to learn fabrication and craftsmanship skills, and to test the effectiveness of their work in a meaningful and practical way.

ROP provides a peripheral opportunity for students who are lucky enough to find or to be pushed into these classes. Our society needs to overcome its prejudice against vocational education. ROP provides relevant, active-learning opportunities for Marin County students.

ROP helps those who do not want to go to college or who cannot afford college.

I am so excited about ROP. What we are offering will be ground breaking. It is a program involving a youth-run café, a Comcast cooking series, and a multimedia health and nutritional program for and by youth.

The architecture program provides an excellent route for students to do practical projects. They get very involved and enjoy making a finished project.

LIST OF QUESTIONS

1. What subjects do you teach? How many students are in each of your classes? How many hours per week are you teaching in this program? How many employers are participating in the classes you teach?
2. Does "Open Entry/Open Exit" impact your ability to teach or manage your classroom?
3. Is the Administration responsive to your teaching needs? Do you have sufficient information on your programs budget?
4. Are you able to get necessary equipment to teach the classes to today's standards?
5. Are you able to keep informed on the latest developments in the industry that you are teaching?

6. How frequently are you visited in the classroom by the Administrators of the program and the members of the Board of Education?
7. How frequently are you visited in the classroom by participating employers?
8. How often do you visit the worksite of participating employers?
9. Who evaluates ROP classes to determine relevance to employers' needs?
10. How satisfied are you with student performance? Are the students actively involved, motivated and attentive?
11. Do you think there is adequate counseling available to students?
12. Please share your thoughts and opinions of the program. What are its strengths and weaknesses?
13. Are there any questions that we should have asked that would help us better understand this program?