

DESIGNING *Ahead of* THE TREND

Career-tech facilities bridge learning and professional life

By Glenn Massengale, Ph.D.



Do we need shops anymore? The question itself reflects a dilemma that educational facility designers have often faced when reconciling traditional building designs with changes in curriculum, instructional methods, student needs, and changes in the nature of work itself. This question is rooted in the historic separation between academic and non-academic study, which many educational leaders would argue no longer exists.

Indeed, the old traditional shop is scarcely found in today's high schools, technical colleges, junior colleges, and community colleges. State-of-the-art technology labs, professionally equipped culinary arts facilities, and towering hangars that house practice aircraft for budding mechanics are among just some of the career-tech facilities where the professionals of tomorrow are learning today. So do we need shops anymore? In a way, the answer is, yes.

From school to work

In November 2006, California passed Proposition 1D to support the modernization and new construction of its educational facilities. The proposition included \$500 million for the reconfiguration, design, and equipping of facilities for career-tech education (CTE). This apportionment incorporated a number of initiatives that represent a movement away from traditional shops and the development of career-tech programs that are consistent with the modern day workplace. This initiative mandated that career-tech courses provide students with rigorous academics as well as technical and workplace skills.

Additionally, CTE programs must prepare students for both a career and college, rather than satisfying one or the other post-secondary goal. The California program emphasizes business partnerships, interdisciplinary instruction, and articulation between K-12 districts and colleges and universities. This integration of traditionally separated career objectives is indicative of the future of CTE.



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Summit High School in Fontana, CA, is designed to accommodate a comprehensive career-tech program for the culinary arts and business management. Educational facilities for the program include a storefront retail area as well as a back area (above) for food preparation and classroom instruction.

Strategies for designing CTE facilities:

■ **Design flexible spaces and plan for mobile equipment.**

Traditional vocational facilities have featured dedicated spaces and equipment. Authentic workspaces tend to be more flexible by design. Large open areas can accommodate flexible work groups and changing assignments. Equipment can be designed to be more mobile. The concept of mobile design can be extended into other dedicated spaces such as science laboratories and music rooms. The Stanley E. Foster Construction Trades Academy in San Diego demonstrates this principle. Large spaces from outdated programs have been redesigned to accommodate current technologies and duplicate authentic work environments.

■ **Design spaces that support integrated and interdisciplinary instruction.**

Design should respond to the integration of traditional academic and vocational instruction. Rather than designing for separation of disciplines, plan spaces that demonstrate the correlation among different learning experiences. Instruction in core academic subjects is enhanced when it is conducted within the context of a career application. Rather than providing a space limited to instruction in home economics, designing a space where food preparation is studied in the context of a commercial enterprise provides a more authentic work environment. Such an application satisfies the instructional goals of home economics and business administration.

Summit High School in the Fontana, CA, is an example of designing for integrated instruction. The front area is designed to operate as a retail bakery; the back area is designed for food preparation and traditional classroom instruction.

■ **Design for off-campus instruction.** The traditional campus design is based on the “teacher presentation to a captive audience” method of instruction. The standard campus model places students together in adjacent classrooms to facilitate the presentation method. The strength of CTE is contextual or hands-on learning. The best contextual learning occurs within the context of the workplace itself. It follows that design should plan for student learning to take place off-site from the traditional campus, perhaps at an actual business site. Such a design consideration relies upon the school establishing effective business partnerships and supports the use of instructors from industry sectors.

■ **Design spaces that can be shared.** As an extension of the off-site concept, campuses themselves can provide spaces where shared-use demonstrates the importance of integrated instruction and mixed use. Career-tech programs can be housed on high school campuses, community college campuses, or even on the campuses of colleges and universities. Such spaces are shared by the various partners to avoid costly duplication. When such cooperation occurs, students benefit from a more coordinated program. Career-tech spaces on a campus can host private interests, specifically business partnerships. Such spaces can be used by businesses to provide training for existing and prospective employees.

■ **Design for knowledge equipment.** Traditional school shops often feature outdated equipment, specific to an industrial trade. Equipment for a modern career-tech facility should focus on information processing and communication to be relevant. A modern shop should include access to a variety of computer applications consistent with the career path, communication networks for messaging and work-sharing, access to the Internet, and a variety of video technologies.

■ **Design for accessibility.** This design feature recognizes the barriers presented by the closed campus approach to design. In the interest of security and autonomy, campuses have been designed as fortresses to keep the public out and the students in. However, the globalization of work, the speed and extensiveness of communication, and the importance of education to workforce development have made the isolation inherent in most building designs ineffective. Therefore, designers must discover new ways to provide security for students while, at the same time, promoting access to programs within the school and access to off-campus learning environments.

Do we need shops anymore? Not the shops of the past—but today’s education system certainly needs career-tech facilities that meet the needs of students and the workforce—what a great opportunity for designers to influence education and future professionals in a positive way. ■

Glenn Massengale is a former high school English teacher, high school principal, and district superintendent. He currently is senior vice president for K-12 education for HMC Architects in Ontario, CA. Reach him at glenn.massengale@hmcarchitects.com.