

Delivering Quality Vocational Education in Wyoming

Creative strategies from schools
and districts throughout the state

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Steve Klein
Rachael Berger
Sarah Calderon
Rosio Bugarin
Elliott Medrich

MPR Associates, Inc.
Berkeley, California

Vocational education is an integral part of Wyoming’s public education system. At some point during their high school careers, virtually all students in Wyoming will take a vocational education course. In spite of this, it’s becoming increasingly difficult for many schools to offer comprehensive vocational programs for all students who are interested in participating.

Low teacher-student ratios and the high cost of maintaining up-to-date equipment make vocational education more expensive to provide than academic education. In times of declining state revenue and tighter school budgets, preserving vocational education options for students often calls for some old-fashioned ingenuity.

Wyoming vocational educators have been adapting to budget and enrollment realities with a multitude of creative strategies. Administrators and teachers explained these strategies to researchers who have been visiting the state over the past six months as part of an effort to rethink Wyoming’s funding formula for vocational education programs. This brief shares some of their methods, outlines basic steps for implementation, and lists additional resources.

The creative strategies described on the following pages are grouped into three general categories:

School Level—Changes to traditional class configurations and course offerings

District Level—Cooperative agreements that enable resource sharing across districts and among schools

Community Level—Partnerships with external groups such as businesses or nonprofit organizations

Wyoming schools and districts of all sizes and locations are incorporating one or more of these methods to deliver cost-effective vocational education.

School-Level Strategies

Using Teacher Resources Effectively

Ideally, every high school would have the resources to offer a full complement of vocational education courses, each taught by a full-time teacher. But if the ideal isn't possible, a school might consider using part-time instructors to teach a smaller number of vocational programs. Such an approach can enable schools to develop and maintain a high-quality core of vocational courses rather than having to spread limited resources thinly across a more comprehensive program.

Another cost-effective strategy is to work toward building a staff of instructors who are able to teach both academic and vocational

courses. These "multiply endorsed" instructors have been certified by the state in more than one subject area, such as a business instructor who also teaches related mathematics courses, or a health instructor who also teaches science. These instructors aren't easy to find, but some schools and districts offer incentives, such as bonuses, for existing staff to receive additional endorsements.

Schools also have chosen to take advantage of distance education courses coordinated by their district, which give their students access to a variety of vocational programs and eliminates the need for every school to maintain all types of vocational courses on site.

Electronic Classroom

Both Fremont County School District #6 and #14 work with the district's BOCES to give students at small schools access to a variety of vocational courses through the use of an electronic classroom. The state's electronic network (Wyoming Equality Network, or WEN) gives every high school the capacity to teach courses, or receive courses, through a satellite hookup. Up to five Fremont sites can participate at a time, although a facilitator must be in the classroom with students. (This facilitator does not necessarily have to be a certified teacher, though.)

Students at the remote sites receive all the class content electronically, although they do gather at the originating site once a month for hands-on training. The distance education capability has given students at small schools access to such vocational courses as a Microsoft/Cisco computer networking class.

For more information please contact:

Sandy Barton, Executive Director, Fremont County BOCES at 307.855.2251.

Les Bishop, Professional/Technical Coordinator, Fremont County BOCES at 307.855.2039.

Grouping Students and Classes Differently

Dwindling student enrollment, an issue for all vocational courses, is especially problematic at advanced levels. Some small schools may have only one or two students with the desire and prerequisites for advanced vocational courses, but it's not possible to dedicate an instructor and classroom to just two students. While some schools might choose to establish a minimum number of students that must enroll for the course to continue, many other Wyoming schools provide multiple-level classes that group beginning to advanced students together in the same class period.

The majority of schools in Wyoming offer at least one course where multiple vocational subject levels or multiple subjects are taught within a single class period. These courses are often referred to as combined courses. Although a large proportion of schools offer combined coursework, overall, only about 16 percent of classes statewide fall into this classification. With respect to the intensity of this practice, overall about 16 percent of classes were classified as combined (2001–2002 MPR Associates, Inc. data collection).

Multiple-Level Classes

Niobrara County High School, in Niobrara County School District #1, maintains a variety of vocational course offerings by scheduling multiple levels into one class period. One teacher may have up to four levels of skills, from beginner to advanced, in one classroom. The school lets teachers decide whether they want to group levels or courses this way. One teacher could have a class with two levels of food science, a hospitality program, and advanced technology all in the same period. Another teacher may have a single class in which he or she teaches technology I and II, welding, and drafting. This type of class structure relies on students who are able to work in teams, and independently, without constant supervision because the teacher can be with only one group of students at any given time. It's not ideal, however. Teachers do worry that students may not receive as much attention as they need in this type of setting, but it is better than the alternative—eliminating whole programs or reducing opportunities for students to take advanced coursework.

For more information please contact:

Mr. Richard Luchsinger, Superintendent, Niobrara County School District #1 at 307.334.3793.

Another approach to preserving variety in vocational programs is offering semester-long, rather than year-long, vocational courses. Rotating the courses gives students more choices each year. At least one school also gives students the opportunity to complete independent-study projects during their winter break.

Interim Vocational Coursework

It used to be that students at Guernsey-Sunrise High School in Platte County School District #2 spent their three-week winter break studying for the exams that awaited their return in January. Recently, though, the school began to schedule exams before the winter break so that students didn't have to spend their vacations studying. Students now have the option to do independent-study projects during the three weeks before the second semester and earn one credit for their completion of this interim vocational course.

For more information please contact:
Ken Griffith, Principal, Guernsey-Sunrise High School at 307.836.2745.

Supplementing Equipment Budgets

Up-to-date computers, related software, diagnostic machines, lathes, saws, welding booths, and the many other pieces of equipment that are essential to quality vocational programs are also their most costly element. Rapid techno-

logical advances render hundreds of thousands of dollars in purchases obsolete soon after the equipment is installed. Given that reality, many schools are finding alternative ways to provide students with access to necessary equipment.

Leasing Option

Pine Bluffs Junior/Senior High School in Laramie County School District #2 leases computers and computer applications rather than buying them outright. While this approach doesn't necessarily save money up front, it does enable the school to continuously update computer technology equipment and programs.

For more information please contact:

Mr. Vern McAdams, Business Manager, Laramie County School District #2 at 307.245.3738.

Fund-raising activities can help supplement equipment budgets, as well as offer students opportunities to learn skills and take ownership of their programs. One common strategy is the creation of student-based enterprises that provide program-related services, such as

auto repair shops, cafes, or home construction. On a smaller scale, schools may choose to install vending machines and dedicate proceeds to vocational programs, or have students construct their own equipment where possible.

Student-Based Enterprise

Upton High School in Weston County School District #7 found an innovative way to provide quality vocational education while saving the district money. Upton High School's move to a new facility meant the welding class would need new welding booths. Rather than spend about \$3,000 each for prefabricated booths, the students pitched in and constructed their own at a cost of about \$500 each. At the same time, they were able to apply their welding skills while improving their workstations.

For more information please contact:

George Mirich, Principal, Upton High School at 307.468.2361.

Mick Tonkel, Welding Instructor, Upton High School.

District-Level Strategies

In addition to working within their own districts, many Wyoming schools have developed strong partnerships across districts that enable them to expand their vocational education course offerings. Sharing teachers within school districts has been an especially effective cost-saving strategy for vocational instruction.

Teacher Sharing Within School Districts

The Fremont County BOCES (Board of Cooperative Education Services) has created partnerships among all its school districts that enable vocationally endorsed teachers to serve multiple sites. For example, one district has hired a full-time CAD (computer-aided design) instructor who teaches a half-day at one site and a half-day at another, providing both schools with access to computer-aided drafting instruction.

For more information please contact:

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Tight budgets also have led to requests for vocational instructors to assume “non-teacher” roles in many schools. For example, an instructor who has industry knowledge may also be the liaison who contacts employers for student internships or possible donations of equipment. Some districts are sharing vocational coordinators who can split their time between districts and also make calls on behalf of several schools, avoiding

the duplication of effort that often exasperates business leaders.

To encourage additional sharing or streamlining of resources, some districts provide a one-time bonus for teachers who establish dual enrollment agreements with postsecondary institutions. Funds for these types of initiatives come from various sources, including Perkins funds and/or BOCES money.

Staff Sharing Among School Districts

Several Fremont County school districts work with the Fremont County BOCES to share certain staff. They pooled resources to hire five facilitators to oversee career planning for eighth- and ninth-graders. By the end of the ninth grade, every student in the county is required to have a career portfolio to better prepare them for their vocational education opportunities in the upper grade levels.

The Fremont BOCES determined this sharing of funding had saved the districts more than \$150,000 in additional salary and benefits that would have been required if each district had hired its own part-time facilitator.

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Les Bishop, Professional/Technical Coordinator, Fremont County BOCES at 307.855.2039.

Community-Level Strategies

Building Partnerships with Industry

Many school districts in Wyoming are reaching outside the school to enhance vocational opportunities for students. In some cases, these external sources can fill equipment and personnel gaps in vocational programs and provide an essential supplement to district funding.

Industry can offer valuable services to schools by bringing relevant work-related experiences to students and enabling them to

learn on the latest technology. Community colleges are another source of up-to-date equipment as well as instruction.

Local businesses and industries can be valuable contributors to high school vocational programs on many levels. They can provide speakers to answer questions and work with students, advise on curriculum, and help schools with their equipment needs, among other things.

Industry Experts

Campbell School District #1 has a partnership with local industries called BIG E (Business Industry Government Education) Round Table. Annual meetings give representatives from different industries a chance to update vocational teachers on recent industry trends, help them adjust their curriculum, and make more informed equipment choices.

For more information please contact:

Dr. Larry Heslep, Associate Superintendent for Instruction, Campbell County School District #1 at 307.682.5171.

Equipment Provisions

A partnership between the Fremont County BOCES and Cisco Systems gives all eight school districts an opportunity to receive better equipment and training for their technology programs. Cisco has chosen Fremont County as a Beta site to test a video streaming mechanism. The districts receive discounts of 40% to 70% on Cisco equipment and have access to an online curriculum that culminates with Cisco Certified Networking Administrator (CCNA) certificates.

For more information please contact:

Sandy Barton, Executive Director, Fremont County BOCES at 307.855.2251.

Les Bishop, Professional/Technical Coordinator, Fremont County BOCES at 307.855.2039.

Tapping Community Resources

A school's surrounding community can yield additional resources besides those from businesses and postsecondary institutions. Nonprofit organizations can provide learning opportunities for vocational students, for example. And in at least one case—Carbon County #1—citizens of the entire community have pledged their support for vocational education by approving a tax levy to fund vocational teacher salaries.

Community-Level Partnerships

Fremont County has partnered with Habitat for Humanity to allow construction trades students the opportunity to build one house each year. The students join other volunteers to build a home from the ground up for a needy family. In addition to the obvious benefits for a vocational program that Habitat for Humanity provides—materials, expert guidance, and a working facility—students also get to experience the joy that their work can bring to fellow members of the community. Such partnerships truly enrich a student's vocational coursework experience.

For more information please contact:

Sandy Barton, Executive Director, Fremont County BOCES at 307.855.2251.

Les Bishop, Professional/Technical Coordinator, Fremont County BOCES at 307.855.2039.

Partnering with Postsecondary Institutions

Partnerships between Wyoming high schools and area postsecondary institutions have resulted in dual enrollment agreements, which enable students to earn college credit while still in high school, encourage their continuing education, and provide access to high-end vocational equipment otherwise not affordable to a school or district.

Partnerships with Postsecondary Institutions for Course Offerings

Northern Wyoming Community College District/Sheridan College offers the following programs to high school students throughout the state:

- Concurrent Enrollment
- Technical Block
- Vocational Exploratory Programs

Students can take courses either at the Sheridan campus, a satellite campus in Gillette, or at their home high school. They receive credit toward vocational coursework at their high school and college credit in a technical program. Some of the coursework offered at Sheridan includes diesel technology, hospitality management, machine tool technology, police science, and welding.

For more information please contact:

Dr. Jerome L. Winter, Vice President for Instruction and Student Services, 307.674.6446.

Teacher Sharing with Local Community Colleges

All eight districts served by the Fremont County BOCES have developed a teacher-sharing initiative with their local community college. For example, to provide two of the smallest schools in the county with Cisco networking instruction, a full-time technology instructor from the Central Wyoming College Cisco Networking Academy teaches one period a day at each high school site. The instructor remains a full-time community college teacher with appropriate salary and benefits, and the schools have access to a vocational instructor at no cost to them.

For more information please contact:

Sandy Barton, Executive Director, Fremont County BOCES at 307.855.2251.

Les Bishop, Professional/Technical Coordinator, Fremont County BOCES at 307.855.2039.

Implementing the Strategies

Some districts may find it challenging to implement some or all of the strategies noted here. The first step is to carefully consider which strategies are appropriate, then turn to developing policies to support them. Here are some guiding questions schools may want to consider as they begin improving their own vocational education programs.

Key Questions for Implementation

What types of resources will be required to educate key district personnel about potential cost-effective strategies?

What are the start-up costs associated with the implementation of such strategies?

What resources will be required to sustain the strategies?

Guidelines for Implementation

Vision—Begin by defining what you want for students, teachers, and parents.

Plan—The odds of success increase when efforts are organized and coordinated.

Understand options

- Research and study successful projects at other sites.
- Visit other schools for ideas already in place.
- Talk to others in the field and benefit from insight.

Seek consensus among all participants

- Buy-in comes when all parties share a common vision. Ownership is reinforced when all parties are engaged in the entire process.

Delegate responsibility

- Involving others lessens the burden on any one individual.
- Having more than one person involved reduces the possibility of a program collapsing if one person leaves.
- Spreading responsibility among many people builds commitment to the program.

Set realistic goals

- Determine ideal goals, but set shorter-term objectives that are attainable to motivate staff and encourage their continued participation.
- Do not overwhelm staff by focusing on too many areas at one time.
- Set deadlines for activities that are attainable.

Implement—Put your ideas into action and be willing to learn from your mistakes.

Collaborate with others

Give and receive feedback

Stay in contact with sites that are farther along in similar efforts

Evolve, evaluate, and renew your efforts

Other Resources

Career and Technical Education

ERIC Clearinghouse on Adult, Career, and Vocational Education ERIC is an extensive source of information on education, with more than 1 million abstracts of documents and journal articles on education research and practice. <http://ericacve.org/>

Association for Career and Technical Education (ACTE) ACTE is a national education association dedicated to the advancement of education that prepares youth and adults for careers. ACTE offers annual conventions and trade shows on various career-related topics, publications, professional resources and membership services. <http://www.acteonline.org/>

Providing Vocational Education in Small and Rural Schools

Eric Clearinghouse on Rural Education and Small Schools Provides information on American Indian and Alaskan Native Education, Mexican American education, migrant education, Outdoor and Experimental Education, Rural Education, and Small Schools. <http://www.ael.org/eric/index.htm>

Mid-continent Research for Education and Learning (McRel); Rural Education Resources Offers a collection of resources for rural communities looking to improve schools. <http://www.mcrel.org/rural/index.html>

Improving Multigrade Classroom Instruction in Small, Rural Schools This program was created for teachers and administrators in rural areas who have an identified interest in or need for multigrade classroom instruction. The program includes a series of workshops. <http://www.ed.gov/pubs/triedandtrue/improve.html>

Small Schools Workshop The Small Schools Workshop is a group of educators, organizers and researchers based in the College of Education at the University of Illinois at Chicago. It collaborates with teachers, principals, parents, and district leaders to create new, small, innovative learning communities in public schools. <http://www.smallschools.com>

Entrepreneurial Education

Center For Entrepreneurial Leadership, Clearinghouse on Entrepreneurial Education (CELCEE) CELCEE acquires information related to entrepreneurship education including journal articles, websites, syllabi, conferences, pamphlets, curriculum guides, government publications, videos, books, computer software, and more. These diverse resources pertain to entrepreneurship education and related topics from K–12 to post-graduate studies. <http://www.celcee.edu>