

Centennial BOCES Perkins Consortium

Background

The Perkins Field Council was specifically impressed with this group's innovation for non-traditional careers: the Aquaculture program; the Greenhouse; a Catering program for a special dietary needs population; and a Business/Accounting financial support program for low income populations. This article features the Platte Valley High School (Platte Valley School District RE-7, Kersey, CO) Agriculture Education program, the Platte Valley High School Catering Program and the Pawnee School District RE-12 (Grover, CO) Agriculture Education program.

The aquaculture career pathway and the greenhouse related career pathway at *Platte Valley High School* are new initiatives this year. These pathways were selected to help increase diversity in student enrollment and to provide more experiential learning opportunities to students. The community is changing into an urban type of city with less production agriculture and changing demographics so the program is adjusting accordingly. Perkins funds were used to help provide items that allowed more students to become engaged in hands-on learning. The instructor attended professional development events to gather the latest innovations in the vast agriculture industry.

A four-year old Agriculture Education program at *Pawnee High School* also needed more hands-on activities to allow students to build projects relevant to student needs and interests. A boom in housing, both temporary and permanent, in Weld County due to the expansion of the Oil and Gas Industry also prompted the program to add the Design and Pre-Construction career pathway. The program realized that, although both genders are equally participating in the classes, most classes were tailored toward males. The program wants to offer classes that will bring the females skills up to the same level as the males. The primary industries in the community are oil and gas related and agriculture. Students have many opportunities in the immediate community and in surrounding areas to compete for jobs and careers in these industries with the proper introductory skill level. Challenges occurred when both male and female students wanted these skills but there was no class offered to cover them. The school faced physical limitations for shop and classroom space. With the recently passed bond issue, construction of a new Agriculture Education shop and classroom is due to be completed in September, 2015. This is an amazing accomplishment for a district with 84 students, Pre-K through 12th grade; and only 25 high school students. The high school this year has 15 boys and 10 girls and the agriculture program enrollment reflects the community demographics.

The *Platte Valley High School* Catering program has been part of the curriculum for over 10 years. It is enhancing its curricula by incorporating education about the special dietary needs population and how to serve those customers as a caterer. New nutrition guidelines for food sales in schools; an increasing demand for gluten free foods in the service industry; and other special needs such as food allergies facing the food service industry prompted the need for this curricula enhancement. The program faces several challenges. The students have few catering industry opportunities in the immediate community. Some culinary experiences are available 10 miles away (in Greeley, CO.) The program also has to operate in an old fashioned 6-kitchen (Home Economics) arrangement, without significant commercial equipment. The program was able to use Perkins to add 6 Professional Series KitchenAid® mixers (3 with 2013-2014 funds and 3 with 2014-2015 funds) to introduce students to commercial grade equipment. The program did add a counter top convection oven several years ago to have some preliminary familiarity with commercial equipment. The district is 35% Hispanic students and the program demographics reflect the overall demographics of the district.

Key Innovation(s)

Platte Valley High School Agriculture Education

This program is creating a student run corporation. The students grow, market and sell bedding plants from the greenhouse. The students will learn to reinvest the earnings so that future students will have the opportunity to participate in greenhouse management activities. The students track earnings and profits from sales. Although these are reinvested into the program per Perkins requirements, the students calculate what they would earn if they were stock holders. The profits from the corporation provide incentive for students to use best management practice skills learned and motivate them to give attention to the details of the business operational costs.

Pawnee Jr. /Sr. High School Agriculture Education

Students develop shop projects that they sell at the *Annual Hired Hand Auction and Oyster Fry*. Students work both individually and in teams to develop plans, create a bill of materials, and design procedures to build the projects. Students have also built projects for members of the community, including a chicken coop and livestock panels. Students become familiar with the training needed for entry level positions in the construction trades careers. Students gain skills working with assorted materials and with multiple types of tools (MIG welders, chop saws, plasma torches, saws, tape measures, levels, etc). They also learn technical skills through AutoCAD as they design projects. The students have to use higher order thinking skills and they experience team skills and team

communications practices. This is successful because students are allowed the time to experiment with various types of equipment; allowed time to discover what works and what does not work; and are allowed to design and build projects of their choice, related to their interests. The students passed skills, knowledge and safety tests and gained confidence. The students could experience success based on their own efforts and ingenuity. The students had to keep careful records of their plans, their bill of materials, and their procedures. They had to calculate the cost of their project which stimulated comfort with analyzing and making changes based on analysis or critical and innovating thinking. These activities encourage participation in the program by both males and females.

Platte Valley High School Catering

Students use commercial grade mixers to develop new recipes for pizza crust that meet the nutrition guidelines for competitive food sales. Students worked extensively on nutrition analysis and recipe alteration to successfully create their new recipe. Students also used the mixers to test and develop recipes for gluten-free cookies and quick breaks, and for trans-fat free cookies. Each recipe development involved extensive nutrition analysis and recipe alterations. Students were familiar with prior recipes for pizza crust and calzones from their Foods I classes, and from sale of calzones to students during previous school years. Understanding the new nutrition requirements helped them to focus on the development of healthy foods. They also study the function of gluten in yeast bread products and are able to see and taste the results of using gluten free products in comparison to traditional bread products. Student learned to compare and contrast, evaluate, make decisions, communicate and operate in teams, and cooperate with others. The process modeled scientific thinking. The students enjoyed experimenting with new equipment, products and recipes. The students kept careful records of the changes they made in recipes and tried many different variations to find a product that was flavorful, attractive, and “kid-friendly.” The mixers helped save time and avoid the tedium of doing many experiments. The students also calculate the costs of all recipe variations. This program equally attracts males and females.

Key Factors to Implementation

Platte Valley High School Agriculture Education

We continue to spend time learning which nutrients do best and which lights to use on the systems. This promotes experimenting, recording results, comparing and contrasting results, and decision-making skills. Earnings from the aquaculture system and the

greenhouse go back into the project to help sustain it over time. This allows students to better understand profit and loss.

Pawnee Jr. /Sr. High School Agriculture Education

Special training is needed for the instructor and the students in order to keep up to date with equipment technology, tools, and their uses. The teacher also needs to stay current on teaching strategies and shop management. The administration and staff are extremely supportive of the Agriculture Education program. The community is also very supportive, passing a bond for the construction of a new and updated shop and classroom. The oil/gas/agriculture industry is evolving, and markets are growing. In our agricultural based district, students are accustomed to working hard and completing the projects they start. Pawnee High School relies on the community to support the Agriculture Education program through participating in FFA sponsored endeavors.

Platte Valley High School Catering

The Catering instructor has taken numerous classes through Escoffier School of Culinary Arts in Boulder, CO, as well as a class from Johnson & Wales University in Denver. These classes have included specialty courses in gluten-free baking, rustic breads, among others that directly address nutrition and special dietary needs. The administration and staff at Platte Valley Schools are extremely supportive of the Catering program. The Catering program, in turn, provides catering for many of the in-district meetings and meals. The students have also worked occasionally with the food service department to develop “kid-friendly” recipes. The Catering classes at Platte Valley High School meet for approximately 85 minute class periods, which is crucial to the success of these projects. The food service industry is evolving, and niche markets are growing. In this agriculture based district, students are accustomed to eating a diet based heavily on meat and potatoes. This initiative helps expose Catering students to emerging dietary trends. The Platte Valley High School general fund provides a budget of approximately \$300 per quarter, per section for Catering. In addition, funds generated from the Catering program are directed back into the Catering budget for future use.

RESULTS

Platte Valley High School Agriculture Education

This program’s goals are to create an opportunity for students to grow a business on their own as well as to develop and nurture partnerships within the school and community. The program was strengthened by building an opportunity for students to have a “supervised agricultural experience” at the school site. Curricula changes that were made

in the program can easily be made in other agriculture education classes. These were simple additions made to existing curricula that fit perfectly with the state standards for agriculture.

Pawnee Jr. /Sr. High School Agriculture Education

Students successfully developed shop and construction projects for use around the community, both in the private and in the business sectors. Students successfully gained skills, knowledge and safety protocols that will allow them to be successful in whatever they choose to do. Students now have a greater appreciation of the challenges of creating satisfactory products for the specialized needs of potential customers. The purchase of professional trade skills tools has stimulated a greater interest in the program. This equipment could possibly be relevant for as long as 10 years before needing to be updated or modernized. Words of advice: Be willing to experiment with equipment, projects, plans and time. Take the time to do these experiments multiple times!

Platte Valley High School Catering

Students successfully developed new yeast bread recipes (pizza dough/pizza) that comply with the very restrictive nutrition guidelines for competitive food sales, yet taste good and are appealing to the consumer. They also have a greater appreciation of the challenges of creating satisfactory products for specialized dietary needs such as gluten-free foods. The extensive testing and trial and error procedures were important for students to understand how recipes are developed in the food service industry. The students also have a greater understanding of the importance of nutrition analysis and the process for doing this analysis. The purchase of professional grade mixers is a long-term investment in the Catering program. This equipment will likely be able to serve as learning tools in the program for at least 10 years. The curricular changes that were made can easily be made in other Catering programs. These were simple additions that aligned with the state standards and they were relevant to the changes being faced by the industry. This program helped the school's food program meet special dietary restrictions. Words of advice: Be willing to allow the time for multiple experiments with recipes. The "Clean Baking" class at Escoffier in Boulder is an exceptional introduction to gluten-free baking.