

Hudson School District

Wilbur H. Palmer Vocational- Technical Center

Program Review



Susan E. Auerbach, Ph.D.
December, 2006

Table of Contents

Executive Summary.....	ii
Introduction.....	1
Procedures.....	1
Demographics.....	2
Strengths.....	3
Weaknesses.....	13
Recommendations.....	16
Conclusion.....	18
Bibliography.....	19
Appendix A.....	21
Appendix B.....	38

Hudson School District

Wilbur H. Palmer Vocational-Technical Center Program Review

Executive Summary

Dr. Susan Auerbach
Engaging Results

The Hudson School Board contracted with Engaging Results to conduct a program review of the Wilbur H. Palmer Vocational-Technical Center. The decision to conduct this research process was due to two factors - the upcoming opportunity for state-funded renovation and an investment in maintaining the high quality programming for which the Palmer Center is known.

A Steering Committee was formed for this project that included Randy Bell, Superintendent, Bryan Lane, Principal, William Hughen, Guidance Director, Ann Merrill, Acting Vocational Director, Dave Bouchard, Board Member, and Karen Worthen, CTE teacher. The Committee met to design a data collection process that included surveys, interviews and research. This work resulted in the attached report.

The Wilbur H. Palmer Vocational-Technical Center exceeds all the Performance Indicators utilized by the NH Department of Education to evaluate programs. Students, parents, business leaders, faculty and staff gave the Center's programs high marks for meeting the needs of students. Programs offered at the Center are aimed toward meeting current local labor market demands, although some programs could use expansion while others need to be redesigned.

Weaknesses in the Center include the lack of an instrument to gather meaningful student outcome data post-graduation, limited student participation in internships and job shadowing opportunities, small numbers of students taking advantage of earning college credit while in high school, and a limited student participation in Career and Technical Student Organizations. In addition, there is a lack of understanding among faculty and staff regarding financial management issues, and limited amounts of collaboration between the high school faculty and the Center.

Recommendations include:

- *Engaging in a comprehensive planning process*
- *Developing strong business connections for each of its programs*
- *Investigating a method to collect data on students who graduate*
- *Developing strategies to encourage students to take advantage of earning college credit while in high school*

While the Wilbur H. Palmer Vocational Technical Center remains an effective program, planning and change must occur across all components of the Hudson School District in order to meet the needs of all students in the 21st Century.

Hudson School District

Wilbur H. Palmer Vocational-Technical Center Program Review

Dr. Susan Auerbach
Engaging Results

Introduction

The Hudson School Board contracted with Engaging Results to conduct a program review of the Wilbur H. Palmer Vocational-Technical Center. The decision to engage in this research process was due, in part, to the upcoming opportunity for renovation as part of the state's 20 Center Renovation Process. In addition, the Board and Administration of the Hudson School District are invested in maintaining the high quality programming for which the Palmer Center is known.

Conducting a comprehensive program review is an extremely useful first step in the development of long range program and facility plans. Not only does the review process provide decision-makers with good information about what is working well and what needs to be improved, it is often required as part of grant applications and other funding processes at the state and federal level. Good educational and business practices include a periodic evaluation by someone outside the organization to conduct this type of research.

Procedures

A Steering Committee was formed for this project that included Randy Bell, Superintendent, Bryan Lane, Principal, William Hughen, Guidance Director, Ann Merrill, Acting Vocational Director, Dave Bouchard, Board Member, and Karen Worthen, CTE teacher. Dr. Susan Auerbach met with the Steering Committee to develop research questions which would guide the content, scope and procedures for the project. The Committee agreed to the following areas of focus for the project:

1. How well is the Alvirne Career and Technical Center performing?
2. How viable and sustainable are the current programs of the Center?
3. What are the outcomes from the Center?
4. How effective are the connection and integration of programs between the Center and Alvirne High School?

The complexity and scope of this project required multiple approaches to data collection. Perceptual data was collected via surveys of students, parents, and teachers. Additionally, interviews were conducted with CTE staff, administrators, state agency personnel and business representatives from Advisory Committees.

Labor market data was gathered from various sources to garner information regarding viability of programs currently offered. In addition, questions were directed at employers regarding the preparedness of students who had completed the CTE programs.

A review of various state and national reports was conducted to analyze how well the Palmer Center measured against evaluation standards from other sources. These reports included a recent statewide evaluation conducted by the Kister Consulting Group, the NH Department of Education’s Annual Performance Indicator Report and Director’s Report, and reports written for other national education and trade organizations, (see Bibliography for a complete list).

All of the information collected has been analyzed in an effort to address the research focus areas cited above. This report is organized around the strengths and weaknesses of the Center, along with recommendations for future action.

Demographics

Student Demographic Data

According to the NH Department of Education, there were 818 students enrolled in the Center in 2005. Of this number, 106 or 12.96% were from sending schools and 17.73% were students identified with educational disabilities. In order to make sense of this data, it is helpful to compare it to other Centers in the state:

	Alvirne	Concord	Dover	Nashua	Milford	Salem
Enrollment	818	550	393	1150	404	713
# from sending schools	106	306	124	73	40	84
% sending school students	12.96%	55.64%	31.55%	6.35%	9.90%	11.78%
% Special Ed	17.73%	24.55%	20.10%	8.09%	13.12%	12.34%
Graduation Rate*	96.27%	83.72%	100.00%	98.37%	96.49%	97.40%
Post Secondary Enrollment 4 and/or 2 year**	57.76%	33.13%	42.11%	38.25%		85.71%
Working	17.24%	39.16%	83.33%	9.29%	78.21%	24.06%
Military	3.45%	4.22%	7.89%	3.83%	16.67%	2.63%
Unknown	26.72%	45.78%	0.00%	48.63%	1.28%	4.14%

*Graduation rates are collected only for students who are identified as Senior Program Concentrators, or a student in his/her senior year who has "...completed greater than 50% of the required sequence of instruction in his/her CTE program and is enrolled in the second half of the program as of October 1st or March 1st." (NHDOE 2005).

** The NH DOE does not track attendance at a 4 year institution and a 2 year institution separately.

As you can see, Alvirne has neither the highest nor the lowest numbers of students enrolled, percentage from sending schools, or percentage identified as Special Education. Also, among these five Centers, the Wilbur H. Palmer Center has the second highest number of students going on to postsecondary education.

Organizational Structure

The size and scope of staffing for a Career and Technical Center impacts the Center's ability to provide services to students. The numbers and types of staff varies somewhat across the state. Again, comparing the Palmer Center with CTE Centers in Concord, Dover, Nashua, Milford and Salem the Alvirne Center has 23 teachers as compared to 12 in Concord, 18 in Dover, 26 in Nashua, 15 in Milford and 26 in Salem. Each Center has a Director as mandated by federal and state statute. The Wilbur H. Palmer Center has an additional administrative position of Vocational Coordinator. However, it is interesting to note that Concord has two additional staff – a Career Development Specialist and a Student Services Coordination. Dover's Director reports that their Center used to have a position to coordinate with sending schools which has been cut, thus greatly limiting their ability to market their programs and provide access to students from surrounding districts. Nashua's Career Programs are split between their two high schools and staffing includes an Assistant Director, a Pre-School Director, 2 Career Cluster Coordinators, and four program specific aides. Salem's CTE Center has a Student Services Administrator, a Guidance staff person and a School to Career position in addition to its Director.

Strengths:

By most measures, the Wilbur H. Palmer Vocational-Technical Center is one of the premiere Career and Technical programs in New Hampshire. Not only do the programs enjoy huge support from students and parents, the Center consistently rates very high in measurable standards established by the state. Many of its courses are considered to be progressive and leading edge.

Performance Indicators

The NH Department of Education utilizes a system of seven Performance Indicators against which all Centers are measured. The Palmer Center exceeded the state goal in all 7 Performance Indicators. In four of the Indicators, the Palmer Center ranked among the top ten Centers, with the highest percentage statewide in numbers of Non-Traditional Participation rates. It should be noted that this is an area of concern cited in several studies and one in which more than half the Centers reporting did not meet the state goal.

Performance Indicator	State Goal	Alvirne
Academic Attainment	12.36%	19.27%
Voc Skills Attainment	68.40%	84.73%
HS Completion Status	92.84%	96.27%
CTE Completion Senior Concentrators	88.95%	97.52%
Class 01 in Continuing Ed/Emplymnt	90.0%	95.16%
Non-Traditional Participation	26.38%	46.65%
Non-Traditional Completion	22.2%	41.74%

Perceptual Data

While performance data is critical to an evaluation of a program, the perceptions and thoughts of its "customers" are equally important. Private sector organizations spend

millions of dollars gathering customer satisfaction information to ensure that their products are meeting the needs of their clients. In the case of this study, surveys were distributed to all Center students in attendance on a given day and 359 of them responded. In addition, they were asked to address envelopes to their parents so that a survey could be sent home. While we do not know how many students actually addressed an envelope, we did receive 51 responses from parents, (see Appendix A for surveys).

Students were asked to indicate which courses and/or programs they had taken. Students from every program offered by the Center responded. The largest number of responses were from students who had taken at least one Veterinary Technology course, with Health Occupations, Accounting, Culinary, Building Trades, Early Childhood, Marketing, Floriculture well represented. Parental responses included almost every program area as well. Other data regarding the respondents was:

<u>Males: 175</u>	<u>9th: 1</u>	<u>11th: 197</u>
<u>Females: 220</u>	<u>10th: 90</u>	<u>12th: 106</u>

Students were overwhelming positive about the programs offered by the Center.

Three hundred and fifty eight, or 90% of the students responding, rated the programs at the Center either Very or Extremely positive experiences. Forty out of 51 of the parents, or 79%, agreed with their child on this question. Over 70% or 308 students believe that the courses offered will contribute to his/her career choice, with almost all of the parents agreeing. When asked how satisfied are they with the Center, only 12 students responded below satisfied, with 329 students rating the Center with a Very Satisfied or Extremely Satisfied. Again, parents agreed, with only 2 rating the Center less than Satisfied and 46 responding with either Very Satisfied or Extremely Satisfied.

Many student respondents took this opportunity to share their views of the Center:

“The teamwork and leadership development found in the vocational agricultural classes and its corresponding CTSO cannot be measured via survey by much it affects career choice. What shows in students is the personal growth and drive to succeed no matter what career path he or she follows. I won’t be continuing with floriculture as my career, but being in the class and the FFA has had a lasting and profound impact on me.”

“I’ve had a fuller, more enriched academic experience through vocational classes to a great extent than expected. And they will all greatly benefit my future.”

“The vocational classes I have taken are the best classes I’ve ever had. The teachers actually care about the students too.”

“This program gives people a huge step in life.”

“I’ve learned so much during this class and I’m very happy I had this opportunity.”

Parents also had many comments to share about their children's experiences:

“The Vocational opportunities at Alvirne are fantastic. Two out of three of my children have made career choices based on their experiences at Alvirne. Thanks.”

“This program is one of the main reasons I chose to move into the Hudson school district.”

“My son is talking about college now, when we didn't even think he'd finish high school.”

The number of negative responses regarding participation in job shadowing/internships, college credit and student organizations are larger than the positive, and will therefore be discussed later in this report under weaknesses. However, it should be noted that of those students who do participate in these three opportunities, (job shadowing/internships, college credit, and student organizations), the overwhelming majority believe the experiences are positive and will contribute to their career choice. (See Appendix A for survey data.)

Center Staff see Programs meeting student and labor market needs.

Nine Center faculty responded to a written survey, 6 were available for individual interviews. In terms of seniority, the faculty is spread somewhat equally with six faculty members who have less than 5 years experience, five with 6 -10 years experience, and six with 10 or more years experience. For the most part, faculty members rated themselves high in knowledge of the labor market needs in their program area as well as their program's ability to meet those labor market needs. They believe that the Center's mission is somewhat to extremely well articulated and is being met by their program. They believe they are part of the Alvirne High School community as a whole and play a role in its mission.

Palmer Center provides hands-on experiences.

During their individual interviews, faculty members were asked what they are most proud of in their respective program. Almost every faculty member interviewed spoke about the hands-on nature of their programs that provide students with real world experience. Most of them also spoke about the wonderful facilities and resources the Center has, two said they have cutting edge technology. Faculty members who have students that participate in Career Technology Student Organizations expressed great pride in the success of their students in state and national competitions. Finally, faculty members believe that a strength of their Center is the relationship they are able to have with students given that their programs last several years. Center faculty shared the following perspectives:

“Alvirne's Vocational Center provides excellent opportunities for all students! However, in order to continue to prepare students for life beyond AHS, we need to keep current with technology and the demands of employers, community, and post-secondary institutions.”

“The Center is unique in that it is not separated from the traditional high school.”

The faculty of the High School were also surveyed with 43 responding to an on-line questionnaire. More than half of the academic faculty, (65.1%), said they were mostly or very familiar with the programs offered at the Center and 81.5% agreed that the Center does a good job preparing students. While most academic faculty reported only occasional or no collaboration with the Center faculty, more than half (69%) were interested in engaging in joint program planning. Some of the quotes from the academic faculty include:

“I think that the Center is a wonderful resource for Alvirne students. It keep students engaged who might otherwise drop out of school. For students unaccustomed to academic success, it offers a positive way to build self esteem. Students involved in the CTE seem very connected to their respective programs, teachers, and peers, which is a testament to the dedicated faculty and the strength of the course offerings.”

“I’m proud to work for Alvirne, students have choices that so many other do not. Amazing opportunities!”

On two separate occasions, attempts were made to obtain perceptual data from business leaders who have a connection to the Center. In both cases, a limited number of individuals were identified to participate. Again, this issue will be discussed later in this report. Those business persons who did respond were quite positive about the Center, both in terms of the skills students have when coming to their places of business and to the relationship between their business and the Center faculty. One business leader wrote:

“Personally, Alvirne HS is the ‘Best Kept Secret’ in the state of NH. They offer a well rounded curriculum that can meet virtually every students needs”

Programs Offered

The major strength of the Wilbur H. Palmer Vocational-Technical Center is in the programs offered and the faculty that teach them. The field of Career and Technical education has changed its structure for programs. The programs listed below are organized around that changed structure, called the 16 Career Clusters. According to the NH Department of Education (NHDOE 2005), Career Clusters became an organizing concept for Career and Technical Education throughout New Hampshire starting in 2005. This was done in order to better structure technical assistance provided by the state, to ensure that each Career Cluster was covered by at least one of the 20 Centers and to help students complete their instruction in postsecondary programs. It was not the intention of the NH Department of Education that each Center cover all 16 Clusters, but that the Regional Career and Technical Center system is designed to allow students to participate

in programs outside their “home” Center when it is offered in another Center in their Region.

All of the occupation-specific programs have been subsumed within the broader cluster categories and career pathways. The website careerclusters.org defines the 16 Clusters as “a taxonomy for which all careers are categorized”. The benefits of organizing around Clusters according to this site, are that high schools can better prepare students to meet the demands of postsecondary education and the expectations of employers. Educators can use a curriculum framework that can be adapted to meet local needs. Guidance counselors can use career clusters to help students explore options for the future. Employers and industry groups can partner with schools to contribute to the development of high academic standards that help students prepare for work. Parents can learn what academic and technical courses their children need for college and a variety of career fields. Students can use career clusters to investigate a wide range of career choices. (Adapted from www.careerclusters.org).

As you will see from the labor market information below, the program of studies offered by the Wilbur H. Palmer Vocational-Technical Center has the potential to meet the labor market needs of the greater Nashua/Derry area as outlined by the NH Department of Employment Security. Some programs offered provide students with the skills and experience they need to find employment upon graduation, while most programs and careers require further education and training. According to the Partnership for 21st Century Skills, “Today every student, whether he/she plans to go on to a 4-year college, trade school or entry level job, requires 21st century skills to succeed. We need to ensure that all students are qualified to succeed in work and life in this new global economy.” (2006).

The Palmer Center currently offers programs that are contained within nine of the Career Clusters and does not offer programs that would be covered by the remaining seven Clusters. Again, many of these programs are offered at the other Center’s within the Nashua/Milford/Hudson Region.

Career Clusters offered by the Wilbur H. Palmer Vocational-Technical Center include:

- Agriculture
- Architecture & Construction
- Business, Management & Administration
- Education and Training
- Finance
- Hospitality and Tourism
- Marketing, Sales & Service
- Health Science
- Science, Technology, Engineering & Mathematics (just beginning)

Career Clusters not currently offered by the Wilbur H. Palmer Vocational-Technical Center are:

- Arts, Audio/Visual Technology & Communications (note: a Multimedia course is offered as part of the English Dept. but is not part of the Center)
- Transportation, Distribution & Logistics
- Human Services
- Information Technology
- Law, Public Safety & Security
- Manufacturing
- Government and Public Administration

The Agriculture Career Cluster includes the following programs/courses offered by the Center:

Agriculture Mechanics/Diesel Technology
Floriculture
Landscaping
Veterinary Technology
Production Agriculture
Natural Resources/Forestry

There are many jobs for which this cluster prepares students. According to the Department of Education, there are more than 350 careers in this cluster including: floral designers, waste water treatment plant operators, fish and game officers, pet store managers, international agri-marketing specialists, marine biologists and landscape architects, (NHDOE, 2005). In addition, the demand for agricultural products is increasing along with a growing concern for the management of natural resources, especially in areas such as Hudson that are experiencing population growth. Average salaries and employment opportunities in the Nashua/Derry geographic region for this occupational category vary greatly as well:

Farm workers/laborers	\$8.12/hour	60 jobs
Floral designers	\$12.50/hour	70 jobs
Environmental engineers	\$27.66/hour	40 jobs
Environmental specialists	\$38.44/hour	30 jobs

(NH Department of Employment Security, 2006).

Environmental horticulture is a good example of a major career sector within the Agriculture cluster. According to a survey conducted by the University of Vermont and the University of Maine, there are more than 890 firms who are in this business in New Hampshire. They are involved in production, (nurseries, greenhouses, herbs, cut flowers, turf grass), retail, (garden centers, florists), and landscape services (design, installation, maintenance, lawn care, tree care). This same survey estimates that at least 13,500 people are employed in this industry, and an additional 2,600 are needed. Fifty one percent of the jobs in environmental horticulture are full-time, while 40% are seasonal. Employees were paid an estimated \$217million in 2004.

Dairy farming is the focus of a significant amount of resource at the Center. NH Granite State Dairy Promotion (GSDP website, 2006), reports that over 40 million gallons of milk are produced from 168 dairy farms. Milk is collected from a variety of small farms, such as the Center's, and taken to a centralized processing facility. However, according to the NH Department of Agriculture, the price of milk is the lowest it has been in 20 years. There is a 3-5% surplus of milk which keeps the price low for the dairy farmer. There has been some suggestion to shift the Center's Dairy Farm to an organic dairy producer. While the University of New Hampshire is making this type of change it should be noted that there are significant challenges. In order for milk to be certified as organic, cows must be fed organic feed or graze in an organic pasture. Organic feed can be more than twice as expensive as non-organic feed and the cows must be fed this for a period of three years before their milk can be certified. An even greater challenge is that farmers are not allowed to use antibiotics or other medications when a cow becomes ill as that will render the milk non-organic. Commissioner of Agriculture Steven Taylor believes that even though there may be a shortage of organic milk in the Northeast at this time, there are large dairy farms in the West that are being developed to meet that need.

The nature of farming in our country has changed significantly over the last fifty years. The US Department of Agriculture reports that "although 91 percent of U.S. farms are small family farms, they account for just 28 percent of production. Large and very large family farms make up only 7 percent of U.S. farms, but they produce more than half (58 percent) of agricultural production. Nonfamily farms make up the remainder of farms, and they account for about 14 percent of agricultural production." This website goes on to report that the number of residential or lifestyle farms has increased from "...36 percent in 1993 to 44 percent in 2001. This shift reflects substantial growth in the number of residential/lifestyle farms, from 736,300 in 1993 to 943,200 in 2001...Approximately 25 percent of residential/lifestyle farmers specialize in other livestock, including horses, sheep, and goats."

<http://www.ers.usda.gov/publications/aib797/aib797c.pdf>

According to the US Department of Agriculture's on-line newsletter *Amber Waves*, the United States is experiencing a growth in the number of horse farms. "Given that the demand for horses is derived from the growth in participation in equestrian sports, it follows that horse farms will locate near major population centers. At the same time, horse farming may be particularly compatible as a peri-urban agricultural activity. Horse operations with pasture and sporting facilities provide open space, consistent with the land-use objectives of many suburban jurisdictions."

<http://www.ers.usda.gov/AmberWaves/September06/DataFeature/>

The Architecture & Construction Career Cluster includes the following program/courses offered by the Center:

Building Trades

According to the NH Department of Education, the occupations in Building Trades “prepare students to begin working in construction or for further studies to obtain certifications or advanced degrees in professional and technical careers.” (NHDOE, 2006). Annual salary ranges for this occupation are from \$27,000- \$70,000. The NH Department of Employment Security estimates that there are 4,500 jobs in the Nashua-Derry area under the occupational category of Construction and Extraction, (NHDES, 2006). Postsecondary opportunities include certificate programs at NHCTC in Building Construction and Maintenance, Associate degree programs at NHCTC in Building Construction Technology, at UNH in Civil Technology, and bachelor degree programs at Plymouth State University, Keene State College, Daniel Webster College Dartmouth College, Wentworth Institute of Technology in engineering and related fields.

The Business, Management & Administration Career Cluster includes the following programs/courses offered by the Center:

- Business
- Computer Literacy/Programming
- Business Computer Applications

This Cluster prepares students for careers in business functions and management. New Hampshire is currently offering three pathways from this Cluster – Accounting Technician, Business Technology, Business Information Technology. Students can choose from courses that provide them with skills in the use of technology and basic business practices. Careers in this Cluster include Office Manager, Desktop Publisher, Accountants, Human Resources and Training and Development specialists. The demand for professionals who understand how to integrate technology into business practices is increasing. The NH Department of Employment Security reports an estimated employment of over 5,000 individuals in the Business and Financial Operations Occupations in the Nashua/Derry area. (2006).

The Education and Training Career Cluster includes the following programs/courses offered by the Center:

- Early Childhood Education

The NH Department of Education reports that over 40% of the current educators workforce is age 50 or older, and 500-700 teachers are expected to retire each year over the next few years. Clearly a shortage is coming that will significantly impact the career opportunities for individuals who want to work with children. Job opportunities include Early Childhood Educator or Elementary Educator for those students who want to go on and earn a bachelor’s degree, and for students who may not wish to enter a four-year program can become certified to be a para-educator at most of the state’s Community Technical Colleges. In 200/ the minimum starting salary in a NH school district was \$24,513, while the average teaching salary in the state was \$39,915.

The Finance Career Cluster includes the following programs/courses offered by the Center:

- Academy of Finance
- Accounting
- Banking

This Cluster focuses on preparing students for careers in Financial Services with coursework in banking, financial planning, accounting, and other related content area. The Palmer Center is one of only 8 high schools that is participating in the Academy of Finance, a nationally recognized, industry-validated curriculum model sponsored by the National Academy Foundation. This program experiences a strong linkage with business and includes internship and summer work opportunities. According to the NH Employment Security, Economic and Labor Market Information Bureau, employment opportunities include Accountants and Auditors (680 jobs listed in the Nashua-Derry area), Financial Analysts/Specialists (610 jobs listed), and other finance related occupations (over 300 listed). (June, 2006).

The Health Science Career Cluster includes the following programs/courses offered by the Center:

- Biotechnology
- Health Occupations

The aging population and the high cost of healthcare are coming together to create a crisis situation in many of the health care professions, (NHDOE, 2005). And even though the nursing shortage has gotten significant coverage in the media, there remains a critical need in most of the careers in health care. The program in the Center focuses on science and medical skills so that students may pursue a variety of careers after graduation. An additional strength of this program is that students can become a Licensed Nursing Assistant while still in high school, thus enabling them to work while continuing their training to become a Registered Nurse or in another related field. The Department of Employment Security lists over 2,000 jobs for Registered Nurses and/or Licensed Practical Nurses in the Nashua/Derry area. Salaries for these positions range from \$19.22/hour to \$29.26 for RN's, and from \$15.00/hour to \$18.76 for LPN's.

The Hospitality Career Cluster includes the following program/courses offered by the Center:

- Culinary Arts

This Cluster focuses on preparing students for careers in the Hospitality and Tourism industry, an area which is in demand in southern New Hampshire. And while the Center focuses exclusively on Culinary Arts at this time, it should be noted that this Cluster includes a wide variety of career pathways including Lodging Management, Conference Planning and Travel and Tourism. Several resorts in New Hampshire have apprenticeship programs which combine on-the-job training with college study, sometimes leading to an associate's degree or a certification.

Food Service Managers	\$24.00/hour	130 jobs
Chefs/Head Cooks	\$20.00/hour	180 jobs
Travel Agents	\$16.00/hour	120 jobs

(NHDES, 2006)

The Marketing, Sales & Service Career Cluster includes the following programs/courses offered by the Center:

- Marketing
- Cooperative Education

This diverse cluster prepares students for careers in planning, managing, and performing marketing activities. Students learn purchasing, financing, distribution, pricing, and risk management as well as promoting, selling and marketing products and services. Careers include Account Executive, all aspects of Sales including Sales Managers, Marketing-related fields Public Relations, and Small Business ownership. Students who participate in this Cluster can truly go on to most areas of business. The Department of Employment Security reports that there are more than 300 Marketing Managers and over 18,000 sales related jobs in the greater Nashua area.

Weaknesses:

Demographics and Student Outcomes. While the NH Department of Education collects some limited data regarding student outcomes, the Hudson School District currently does not. Therefore, the District has limited capacity to accurately determine what or how well, graduates of the High School, (whether they are in the Center programs or not), are doing after high school, and how well the district's programs have prepared them for post-secondary education and employment.

Perceptual data from students/parents.

While most of the responses from the student and parent surveys were positive, there were some areas of concern. Seventy-eight percent of the students reported that they have not taken advantage of any job shadowing or internship opportunities. It is clear from discussion with staff that part of the reason for this data is that there is limited staffing available to manage the Internship program. Internship experiences are only really valuable from a career development perspective when there is a connection to the curriculum being taught in the school and a relationship between the school and the employer. When these elements are in place, students can gain meaningful and beneficial experience in a real world setting. To ensure that Internship programs are effective, there must be sufficient staff to supervise and oversee the students' internship experience.

A similar number (71%) reported that they have not taken advantage of earning credit for college. The Hudson School District currently has Articulation Agreements with 13 post secondary institutions in New Hampshire, and is participating in the Running Start program with the Community Technical College schools, (see Appendix B for specifics). The ability to earn college credit while still in high school can help a student get a head start on earning an associates or bachelor's degree. This has two advantages – it saves students money and it provides them with basic skills that will enable them to take more advanced courses after graduation from high school. Many students and parents reported that they are unaware of the opportunity to earn college credit while still in high school.

Seventy-one of the students who responded said they have not participated in a Career and Technical Student Organization, (CTSO). According to the Delaware Department of Education, the benefits of belonging to a CTSO are:

- belonging to a positive group.
- allowing students to see the relationship between academics and the world of work.
- encouraging students to achieve high academic and occupational standards.
- providing an opportunity for students to gain confidence and knowledge through competition.
- motivating youth to become better students and productive citizens.
- developing school and community leaders. (DEDOE website).

Students who do participate in CTSO at Alvirne (27%), report that their participation is very or extremely positive. They shared that they gained valuable experience in teamwork and specific skill development as part of their participation.

Faculty input.

The Center faculty were asked what they perceived as the weaknesses in their programs and the Center itself. These weaknesses can be grouped into four themes:

- Finances
- Staffing/program support
- Curriculum/program planning
- Collaboration with the High School

Finances – Most Center faculty are concerned about their program’s ability to keep pace with changes in technology and employer expectations. Several faculty members said that while the cost of resources and raw materials has increased, their budgets have not. This situation is exacerbated by the changes in the manner in which funds are managed in the district and the building. Federal funds have been decreased in recent years due to a change in the manner in which allocations are made. Income generated by individual programs goes into a revolving fund, but there does not appear to be a good understanding among the faculty of how decisions are made with regard to financial issues and how these funds are expended. The faculty only seems to know that things are different. This lack of understanding results in decreased trust and increased isolation of the Center faculty from the rest of the building.

Staffing/program support – Several faculty members spoke about the need to increase staff for their program as the numbers of students interested in participating is increasing, resulting in class sizes that are too big for effective instruction. Other faculty, especially those with less experience, spoke about the need for professional development and ongoing support for their instructional practice. Some faculty members said that they are working beyond school hours, often without payment, in order to support student internships and other activities.

Faculty members reported very limited coordination or discussion around curriculum issues across Center programs. In some cases when more than one individual is teaching the same course, there is little or no communication about how that course is being taught. While a few Center faculty members spoke about ideas for cross-program collaboration, it would seem that these ideas have not been widely discussed or implemented.

Collaboration across the HS and Center – Center faculty do not believe that the academic faculty understand or appreciate the Center’s programs. However, as reported above, the High School faculty believe they are generally to very familiar with the Center’s programs. However, when it comes to opportunity to collaborate, the High School staff rated their experience lower:

Opportunity to collaborate on a student-related issue:

Never	Rarely	Occasionally	Often
28.6%	23.8%	19%	28%

Opportunity to collaborate on a school-related issue:

Never	Rarely	Occasionally	Often
-------	--------	--------------	-------

19%	28.6%	35.7%	16.7%
-----	-------	-------	-------

This data is important because much of the thinking and research around the future of secondary education is related to the collaboration of programs and content areas throughout high schools, including career and technical programs. For example, in the report to the NH Department of Education, *Redesigning Career and Technical Education for the 21st Century in New Hampshire*, (Kister, 2006), the Kister Consulting Group included as one of their three broad recommendations:

“1. Connect the (secondary and postsecondary) systems and get those within its systems to talk frequently.”

The third area cited in the Kister report is also a weakness in the Wilbur H. Palmer Vocational Technical Center. As stated previously, this researcher attempted to get the names of business who are connected to the Center. Only a few contacts were provided and at least two of those was not employers but were educators from other institutions related to the Career Cluster. So while Center faculty rated their knowledge of the labor market needs in their programs as good, they would appear to have limited connections with local businesses who are potential employers of their graduates. There is a strong indication, based on conversations with faculty and staff, that there was a good relationship with businesses in the past, but that this focus has diminished in recent years. This may be attributable to a lack of leadership in this area.

Finally, I believe the most significant weakness in the Center is the lack of any real vision and comprehensive planning since the retirement of the Center’s founder Wilbur H. Palmer. There is currently no Strategic Plan, no organized approach to determining what is working well and what isn’t, and therefore no structure for improvement. The Center does not have a systematic means of assessing how well a program is doing, or determine what new programs to add. This lack of planning will become increasingly more problematic as the requirements for integration of curriculum, Highly Qualified Teachers, and the implementation of a competency assessment system are becoming a larger part of state and federal regulations.

Recommendations

In his paper *The Future of Career and Technical Education*, Daggett states that the workplace has changed dramatically over the last twenty years. “Strong academic skills and the ability to apply those skills to solve real-world predictable and unpredictable problems and situations has become a minimum requirement for the vast majority of American jobs. There is little room for the academically inept in today’s contemporary workplace.”(2003) This change means that it is “...insufficient to reform only vocational education into a new career and technical education without also making major changes in public schools, especially high schools”. (Lynch 2000). And while the Wilbur H. Palmer Vocational Technical Center remains an effective program, planning and change must occur across all components of the Hudson School District in order to meet the needs of all students in the 21st Century.

1. The Hudson School District should engage in a comprehensive planning process that includes all Center programs, high school faculty, students, parents, business leaders.

This planning process needs to include:

a. An overall vision for the Center and the High School into the 21st Century –

All participants need to engage in a process that creates a unified direction, mission and goals for Alvirne’s students. Several national models exist for high school redesign and one of these should be utilized as a structure. Engaging in this process will go a long way to ensuring that the district offers the most effective and efficient programming to meet the changing needs of students of all abilities and interests.

b. Viability and sustainability of current programs –

The district should establish a system with which it can determine which programs are effective. This will require the utilization of multiple measures of outcomes, not just student testing or competencies. In addition, specific measures of graduate outcomes – postsecondary education and/or job placement need to be incorporated, (see recommendation below). For those programs determined to be struggling, the district should establish a system and timeframe for supporting them until improvement or a determination to end is made. The district should establish a protocol for deciding how and when will decisions will be made to end programs.

c. Introduction of new programs to meet the current and future labor market –

The district should establish a system to determine what programs that it should be offering which it is currently not offering. This system should include specific labor market trend information, an analysis of competing programs and student interest. Once a new program is established, the district should have strategies in place for supporting the new program including integration of curriculum with the academic program, (eg. Biotechnology having connection to Biology faculty and to the Center

faculty). It is important to note that this recommendation contribute to fulfilling a requirement of the state for receiving renovation funding.

d. Integration of programs between the Center and the High School –

The district should begin to develop specific strategies for the alignment of programs and curriculum throughout the system, both vertically and horizontally. This work should include making connections between the middle and high school as well as between the academic and Center programs. Most research on high school redesign indicates that integration of programs is the best way to improve outcomes for students, (Daggett, 2003). In their report to the state, the Kister Consulting Group recommended “Promote the role of CTE in high school redesign.” (2006). This was cited as a weakness across the state. The State Board of Education has created an opportunity for increasing integration and collaboration between the academic faculty and the Center through the new requirements for a competency assessment system. This is an area in which Career and Technical educators have had significant experience. Their ability to assist academic teachers in this effort is invaluable and this opportunity should not be missed. The district, the leadership of the High School and the Center should develop strategies to ensure that the entire Alvirne faculty address integrating their curriculum to build strong programs that lead to both postsecondary education and employment, (eg. Career Academies that emphasize rigorous math/science/engineering).

e. Financial management practices

The district should develop a structure for sound fiscal management of the Center that is clearly understood by the faculty and the community. Process and strategies for generating income as well as for making expenditure decisions should be clearly articulated.

2. The Center should develop strong business connections for each of its programs.

Continuing to provide high quality career and technical programs requires the creation of strong partnerships with business. Business leaders can provide the district with input regarding industry standards, skill expectations, and labor market trends. The district needs to develop a structure for engagement of business on a regular basis that is not dependant on teachers organizing meetings in their free time. A significant part of this structure should be the strengthening of an internship or job shadowing program. Students who have the opportunity to participate in these experiences report a much greater sense of direction in the pursuit of their career choice.

3. The Center should investigate a method to collect data on students who graduate from their program.

This data is essential for the ongoing evaluation of how well the Center is meeting its primary goal of preparing students for work and/or postsecondary training. Without a

process for collecting data, the Center will not be able to assess the impact of its programs or respond to questions of viability. This is true for the academic programs as well as those in the Center.

4. The District should develop strategies to encourage students to take advantage of earning college credit while in high school.

The Kister report states that secondary and postsecondary programs do not work well together, there is little or no collaboration or coordination, (2006). One indication that this may be an issue in the Center is the number of students who do not take advantage of earning college credit while in high school. Many of them reported that they were unaware of the opportunities to do so. Faculty reported that the collaboration with postsecondary institutions varies greatly based on which institution, which faculty member is attempting to make a connection, and which program area is included. A more systemic approach to collaboration would greatly benefit students.

Conclusion

The Wilbur H. Palmer Vocational-Technical Center meets or exceeds every measure used by the State of New Hampshire for career and technical programs. Students, parents, business leaders, faculty and staff express considerable support and satisfaction with the program. Programs offered are, for the most part, strong and are meeting local labor market needs. So what else is needed? If it isn't broken, why fix it? Those questions are answered by the simple fact that "...today's students will have to work harder, faster, and smarter than their predecessors to enjoy success in adult roles and that schools need to reinvent themselves to prepare students to meet the future demands that will be placed upon them." (Daggett, 2005). Clearly, the Hudson School District wants to maintain the high quality programming that prepares students for their futures and as a result, must engage in this reinvention. This probably includes adding new programs, and maybe eliminating others. However, this report has not recommended the addition of specific programs because, it is most critical at this point in time, that the district engage in a process for creating a vision and engaging in comprehensive planning and evaluation. Randomly adding new programs will just perpetuate the sense of disconnect and lack of coordination of programs and services offered. In order to continue to succeed, Center programs must be an integral part of the Alvirne High School as a whole. And according to the National Research Center for Career and Technical Education, achieving this integration must include participation and leadership from students, parents, business leaders, community members, and educators.

Bibliography

Career Clusters Institute

www.careerclusters.org

Copa, George H. and Susan J. Wolff, *New Designs For Career And Technical Education At The Secondary And Postsecondary Levels: Design Guide For Policy And Practice*. National Research Center for Career and Technical Education, University of Minnesota St. Paul, Minnesota, , 2002.

Daggett, Willard R., *The future of career and technical education*. Paper presented at the Model Schools Conference, June, 2003.

Retrieved on November 3, 2006 from:

http://www.daggett.com/white_papers.shtml

Daggett, Willard R., *Reforming American High Schools — Why, What, and How*. International Center for Leadership in Education, (2005)

Retrieved on November 15, 2006 from:

http://www.daggett.com/white_papers.shtml

Daggett, Willard R., *Preparing students for their future*. Paper presented at the Model Schools Conference, June, 2005.

Retrieved on November 3, 2006 from:

http://www.daggett.com/white_papers.shtml

Delaware Department of Education

<http://www.doe.k12.de.us/services/students/ctso/>

Granite State Dairy Promotion

<http://www.gsdp.net/index.htm>

Kister, Joanna, *Redesigning Career and Technical Education for the 21st Century in New Hampshire*. Columbus, Ohio, 2006

Lynch, R.R. (200). High school career and technical education for the first decade of the 21st century. *Journal of Vocational Education Research* 25, 1-34. Retrieved November 2, 2006 from <http://scholar.lib.vt.edu/ejournals/JVER/v25n2/lynch.html>

NH Environmental Horticulture Industry, a joint publication of the University of Vermont, University of Maine and New England Nursery Association. January 2002
New Hampshire Department of Education Career Clusters/Pathways (2005)

Partnership for 21st Century Skills, Assessment of 21st Century Skills, 2006.

Retrieved on November 22, 2006 from:

www.21stcenturyskills.org

Tormey, Patricia, *The Director's Report: Assessing New Hampshire's Career and Technical Education*. Concord, NH, 2006

US Department of Agriculture

<http://www.ers.usda.gov/AmberWaves/September06/DataFeature/>

<http://www.ers.usda.gov/publications/aib797/aib797c.pdf>

Appendix A

Student and Parent Responses to Surveys

Participants' Program Participation

Students:

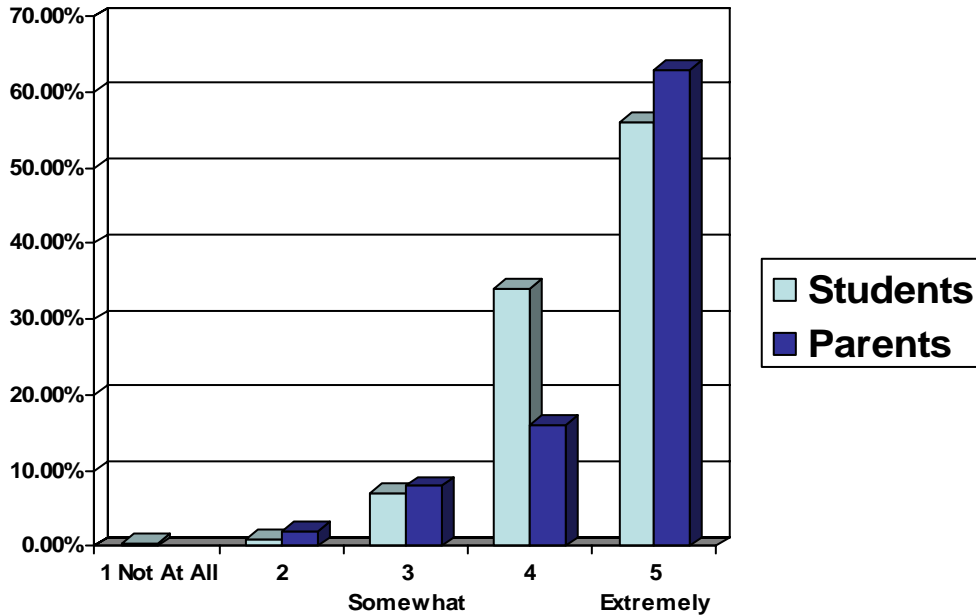
- Academy of Finance **21**
- Accounting **48**
- Ag Mechanics/
Diesel Technology **39**
- Banking **8**
- Biotechnology **5**
- Building Trades **44**
- Culinary Arts **45**
- Early Childhood Ed **44**
- Floriculture **43**
- Health Occupations **49**
- Landscaping **2**
- Marketing **44**
- Multimedia **18**
- Natural Res/Forestry **35**
- Pre-Engineering **17**
- Production Agriculture **2**
- Veterinary Technology **79**
- Welding **5**
- Banking
- Biotechnology **1**
- Building Trades **3**
- Culinary Arts **6**
- Early Childhood Ed **1**
- Floriculture **4**
- Health Occupations **11**
- Landscaping
- Marketing **7**
- Multimedia **1**
- Natural Res/Forestry **5**
- Pre-Engineering
- Production Agriculture **0**
- Veterinary Tech **10**
- Welding **1**

Parents:

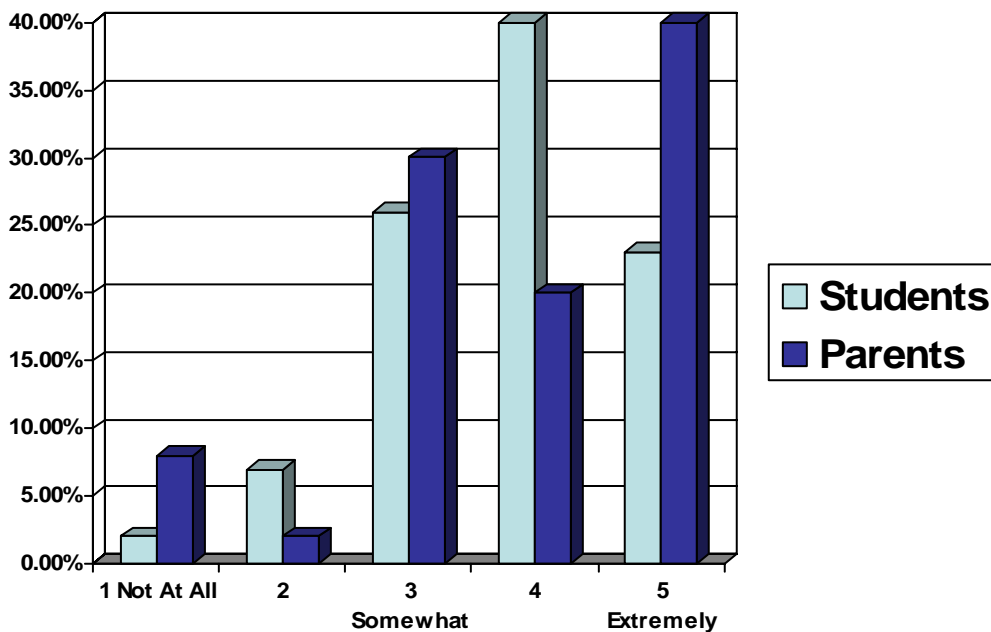
- Academy of Finance **4**
- Accounting **4**
- Ag Mechanics/Diesel
Technology **6**

Student and Parent Responses to Surveys

To what extent was taking this course a positive learning experience?

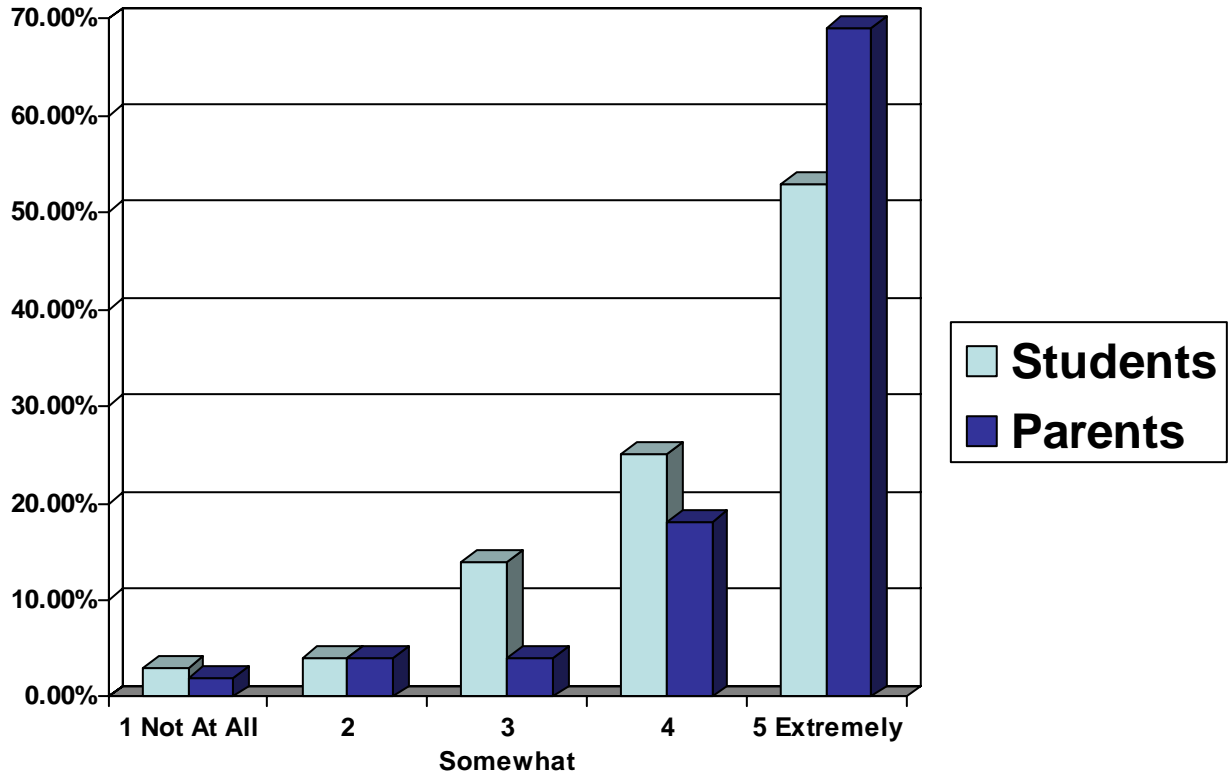


To what extent did the course connect to academics?



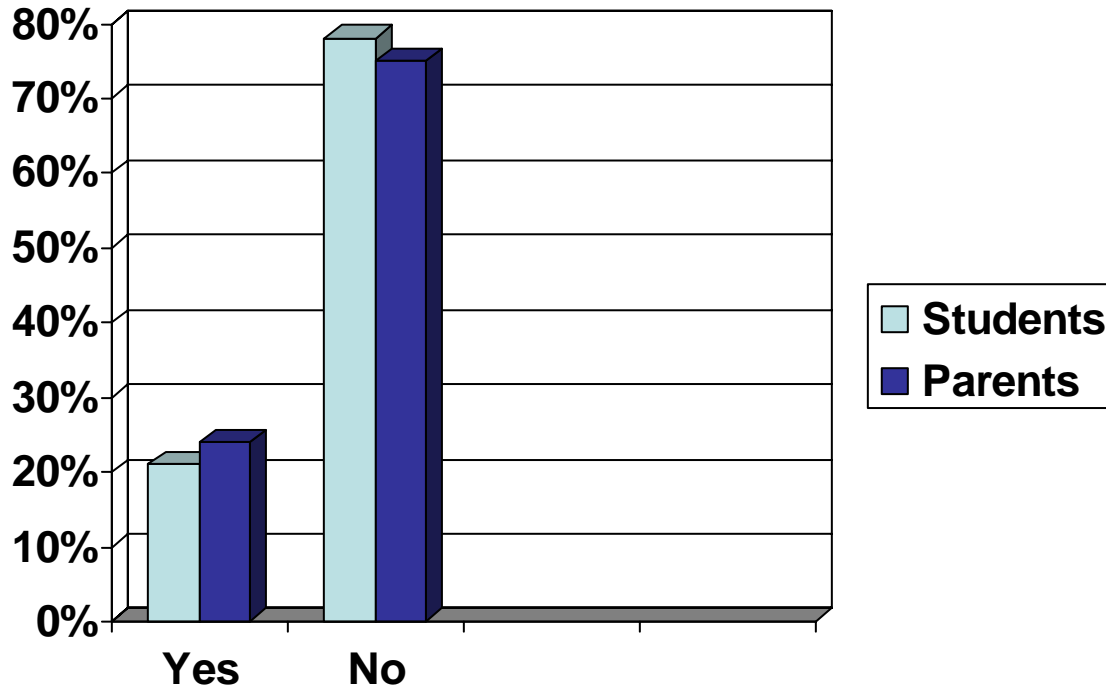
Student and Parent Responses to Surveys

To what extent will this course contribute to career choice?

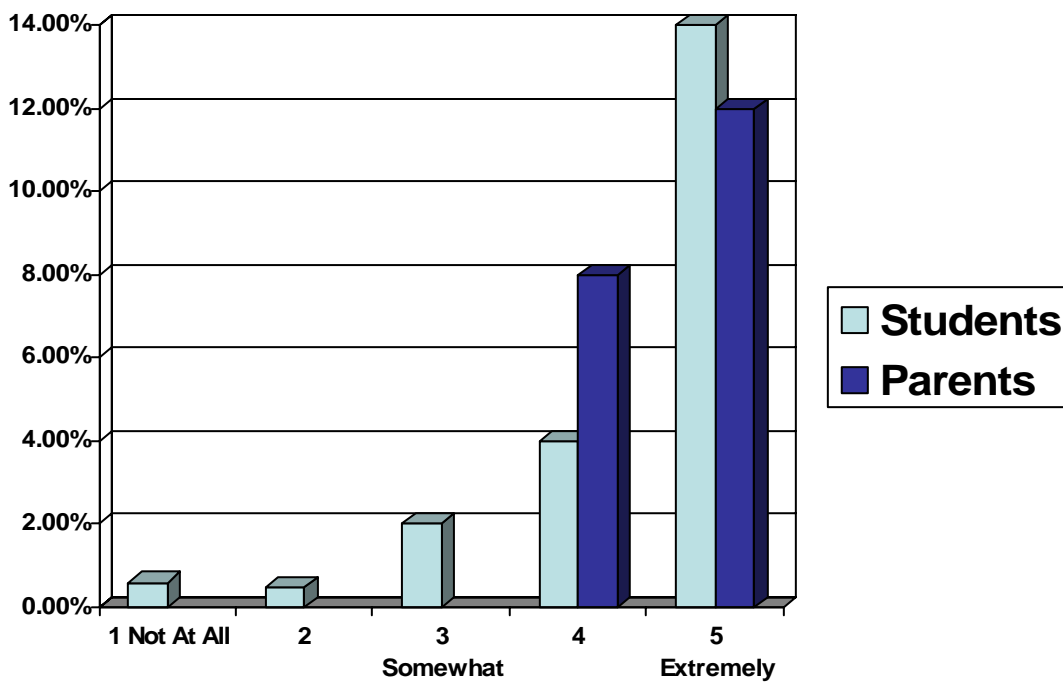


Student and Parent Responses to Surveys

Did you participate in Job Shadowing or Internships

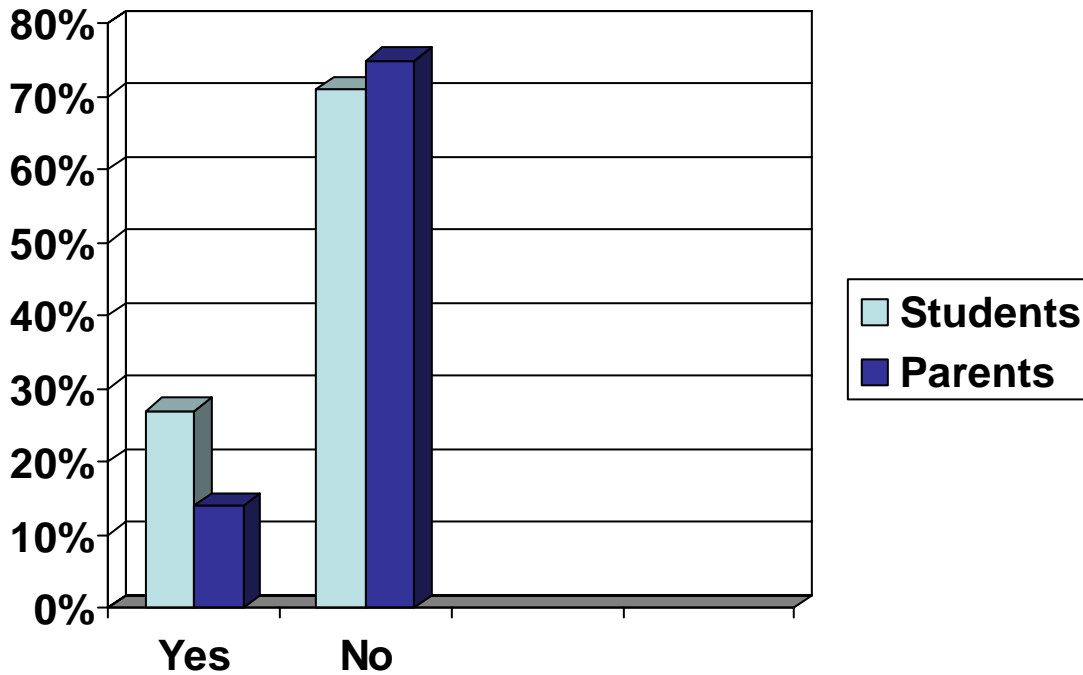


If yes, how helpful to your career choice do you think this experience was?

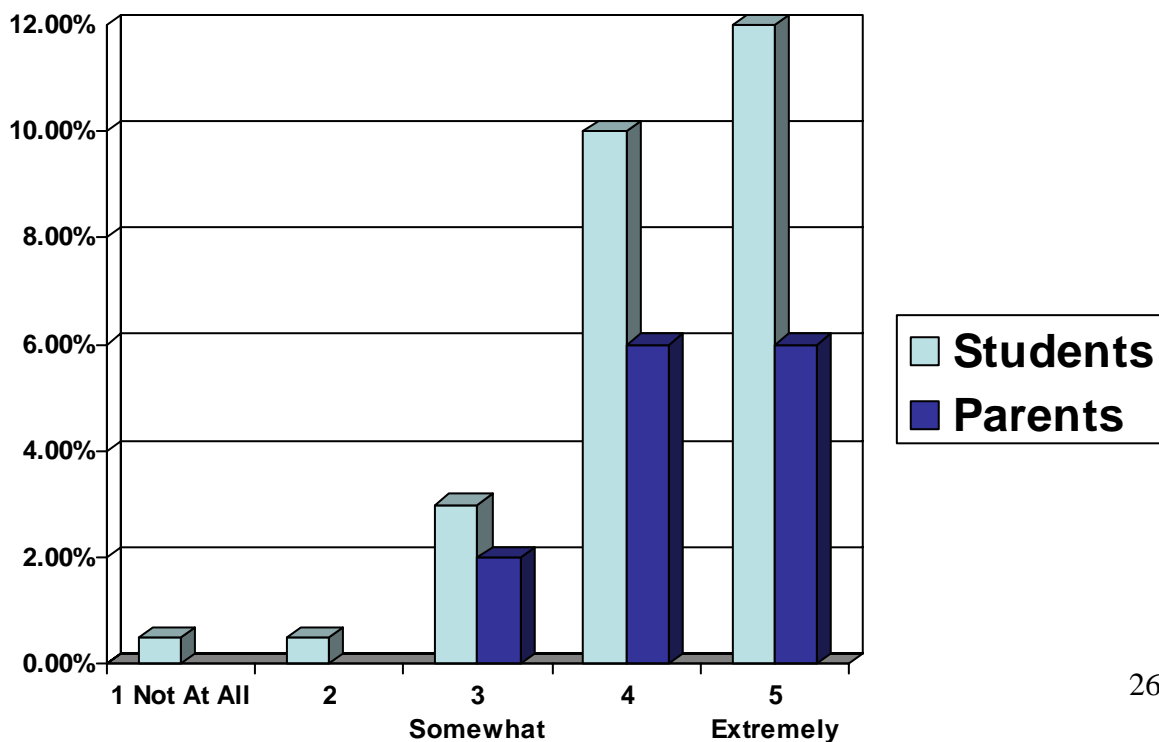


Student and Parent Responses to Surveys

Did you take advantage of advance credit for college?

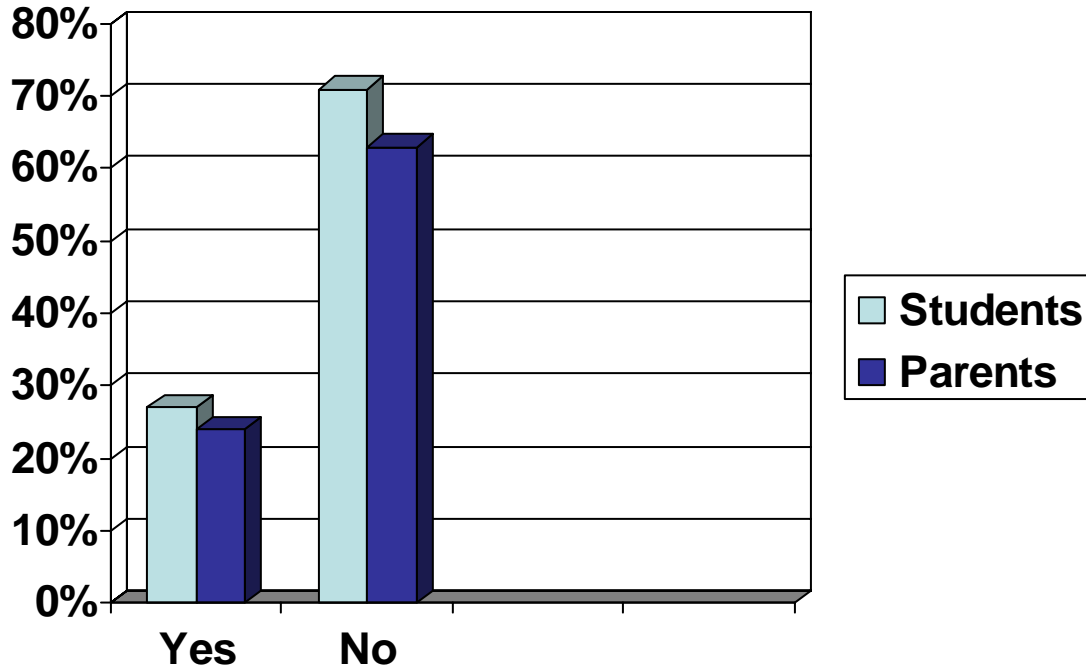


If yes, how helpful to your career choice do you think this credit will be?

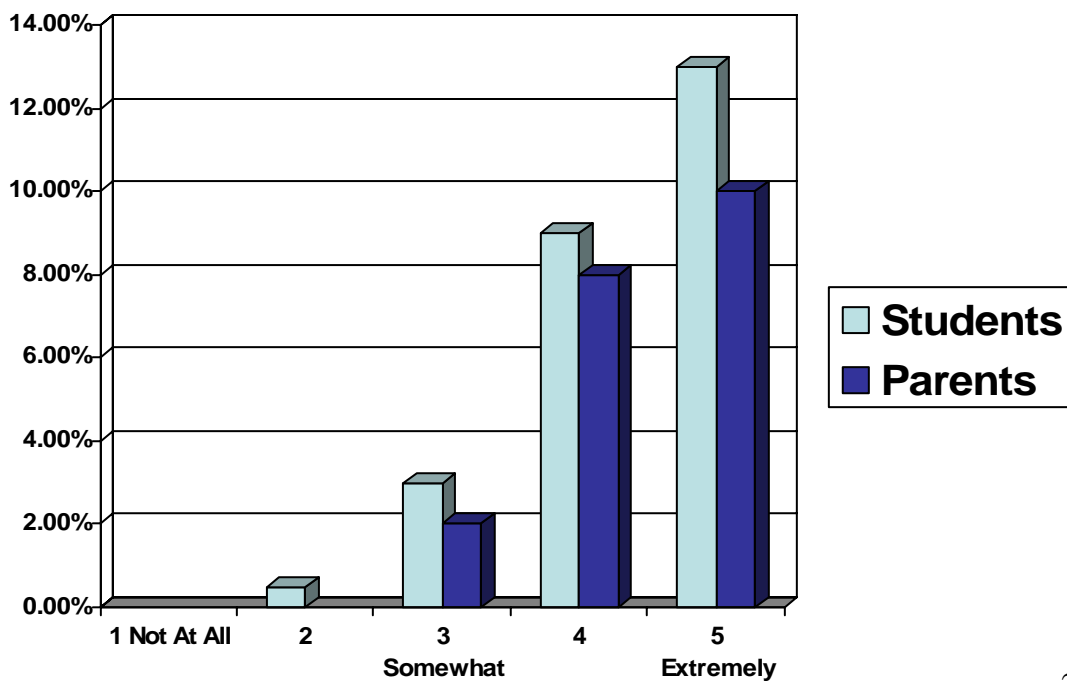


Student and Parent Responses to Surveys

Are you participating in Career Technical Student Organizations?

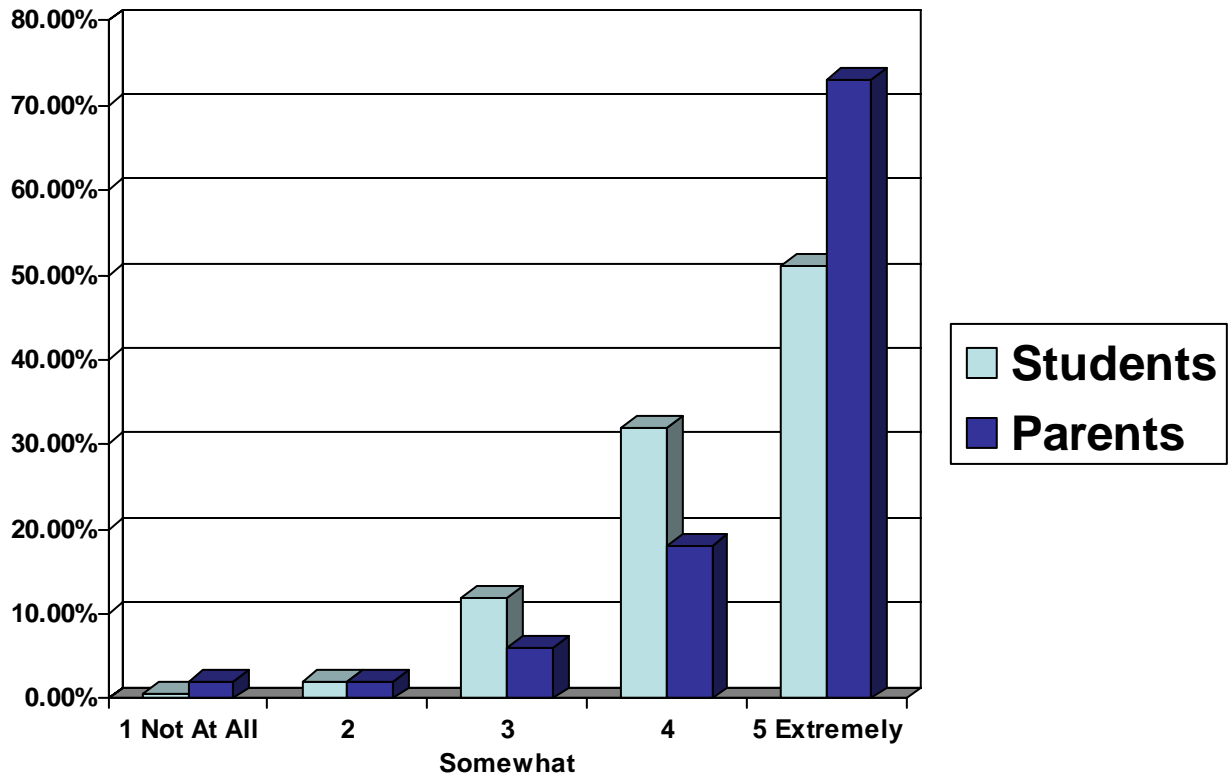


If yes, how helpful to your career do you think this experience will be?



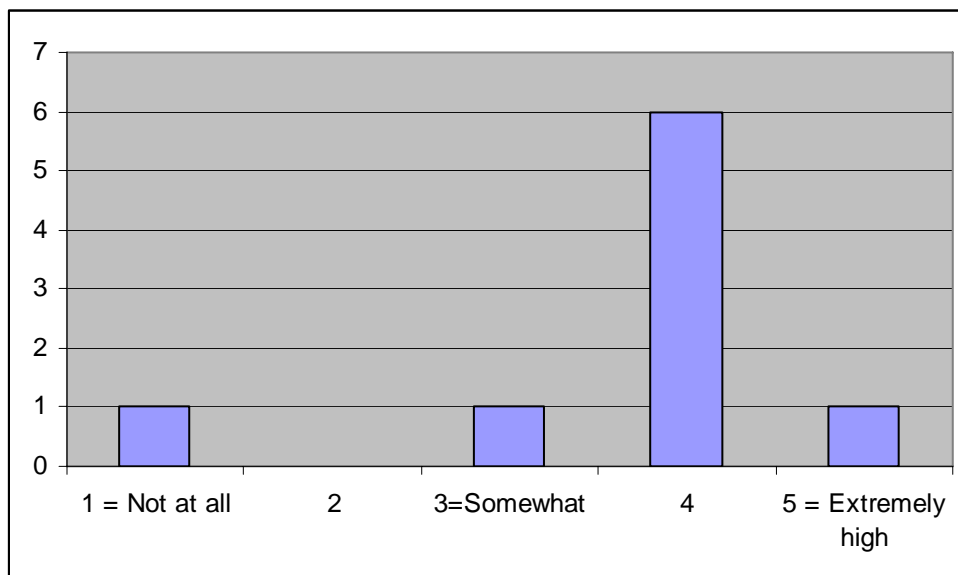
Student and Parent Responses to Surveys

Overall, how satisfied are you with programs offered at WPVTC?

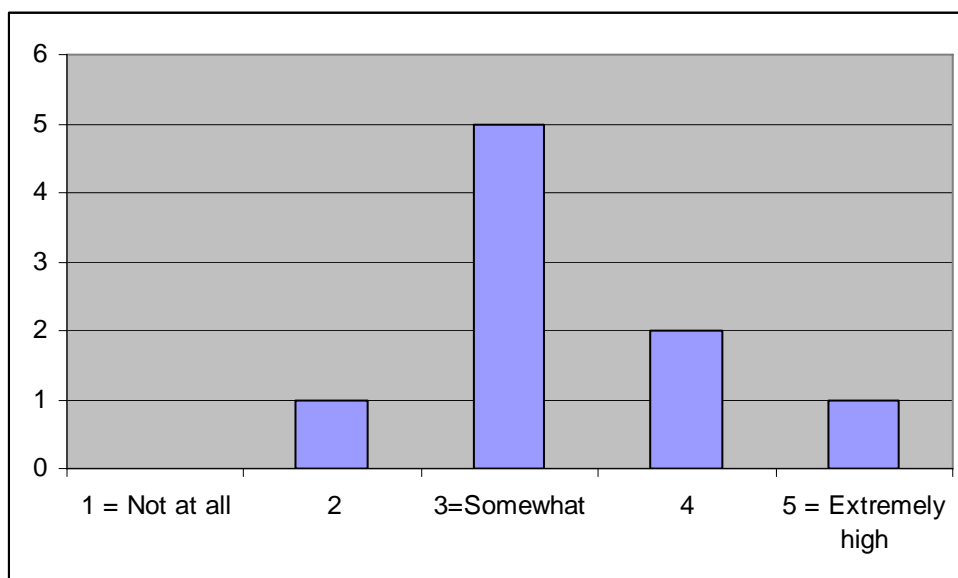


Center Staff Survey Responses

Rate your knowledge of labor market needs in your program area.



How well is your program meeting those labor market needs?



Center Staff Survey Responses

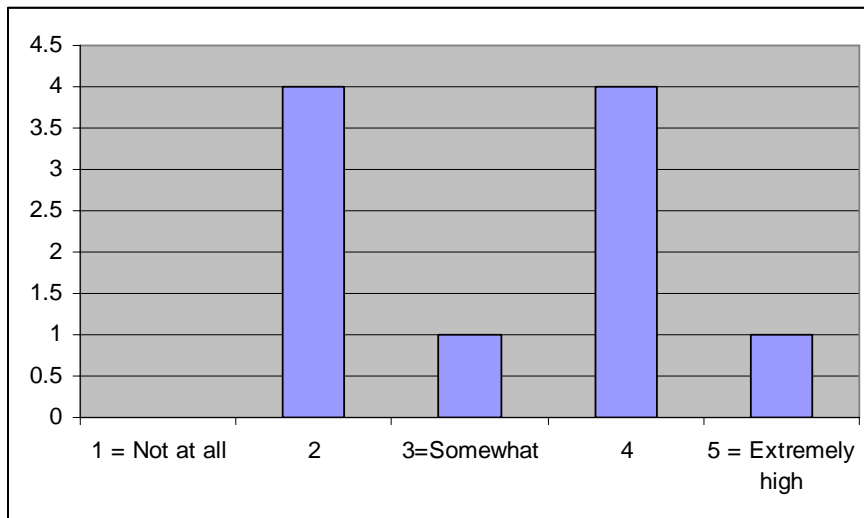
What barriers or limitations restrict your program's ability to meet labor market needs?

Responses:

More staff

Internships

To what extent is the Center serving students who reflect the demographic diversity in the greater Hudson area?



Center Staff Survey Responses

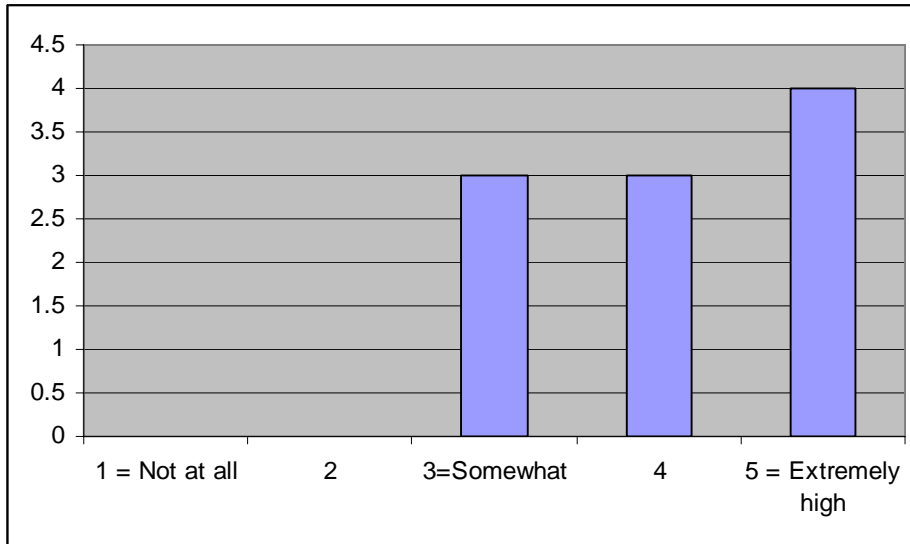
What do you believe is the core mission of the Center?

Responses:

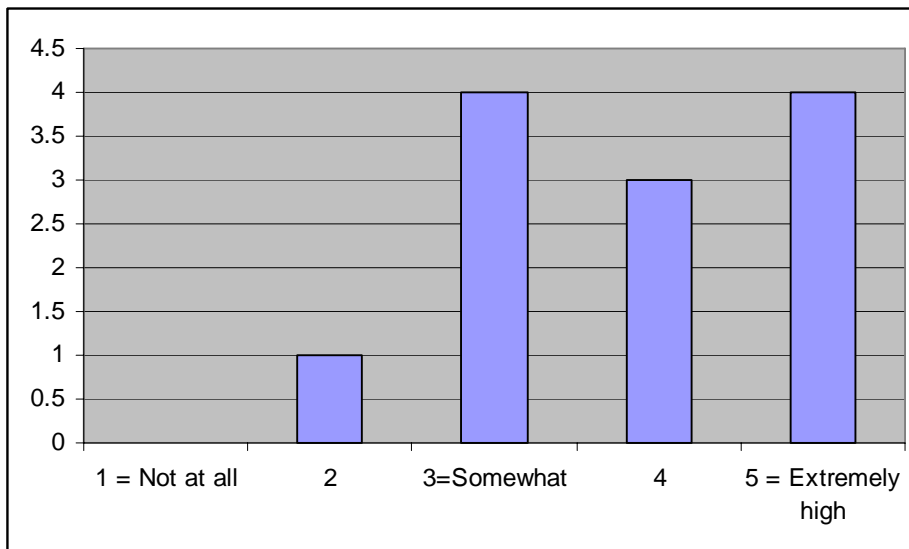
- Students need to be marketable for entry level positions, especially those not seeking post secondary education.
- To promote vocational education, developing skills for work right out of high school or entry into post-secondary programs.
- To prepare students to thrive and to achieve their goals in the real world.
- We are a cohesive high school with one mission statement: skilled/articulate/thoughtful.
- To teach real world job skills.
- To provide students with the skills needed to either enter the job market or postsecondary school and assist with career choices.
- To meet goals for students.

▪ Center Staff Survey Responses

How well is the Center's vision/mission articulated?

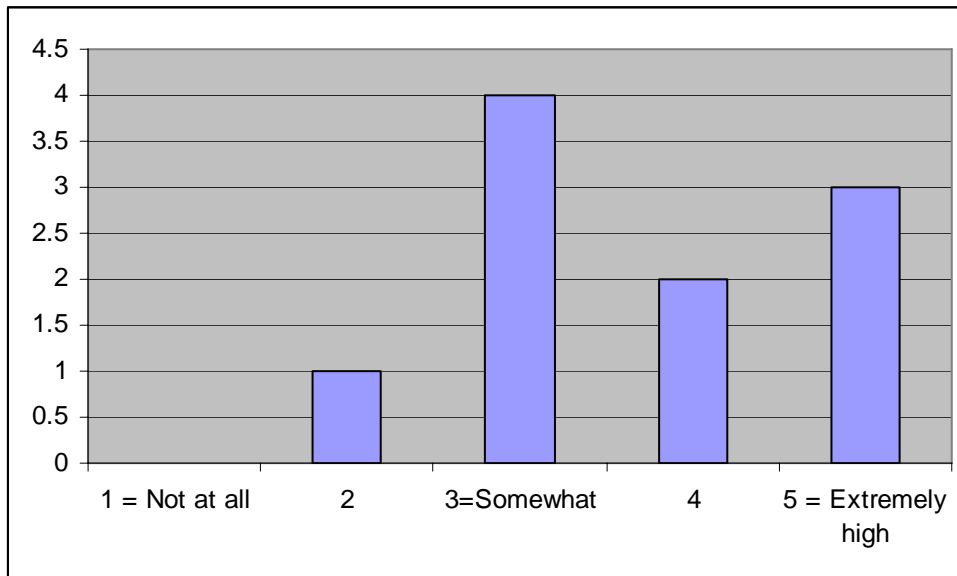


To what extent do you believe your program is meeting that mission?

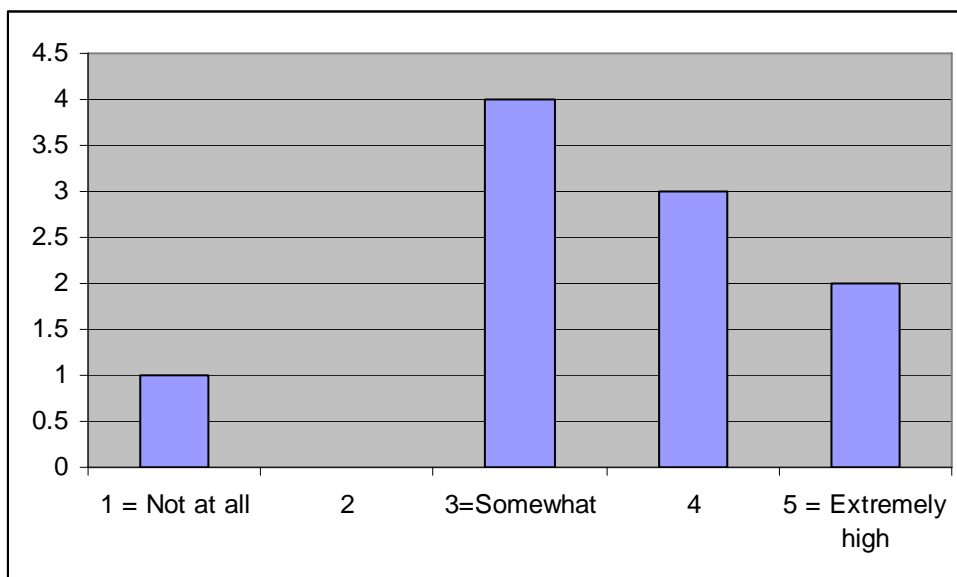


Center Staff Survey Responses

To what extent do you believe you are part of the Alvirne High School community as a whole?



To what extent do you believe you play a critical role in the vision and mission of the High School?

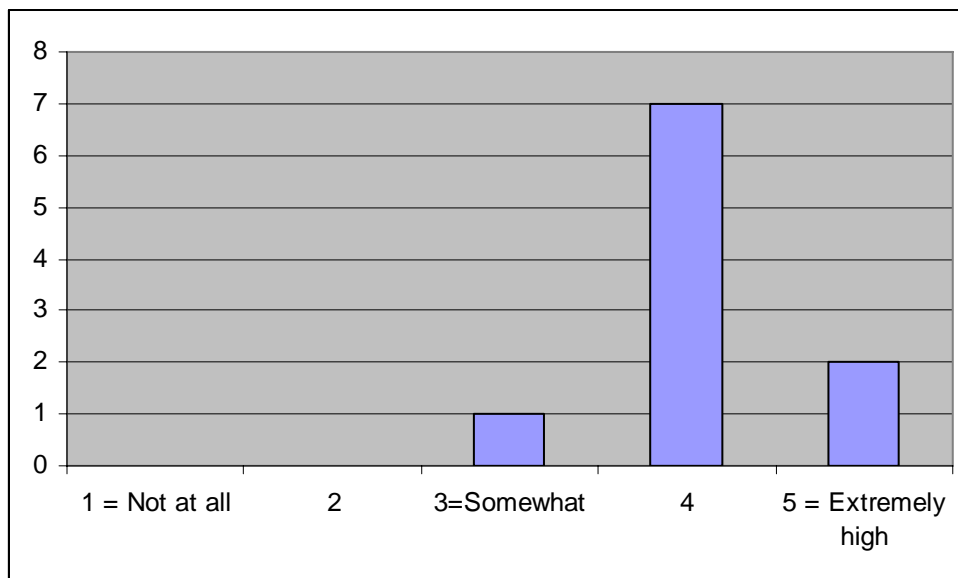


Center Staff Survey Responses

To what extent do you integrate the reading, math, writing or science academic standards into your teaching?

	1 – Not at all	2	3 – Somewhat	4	5 – Extremely
Reading			2	6	2
Math			4	4	2
Writing			1	4	5
Science	2	2	1	3	2

To what extent does your course syllabus reflect the competency profiles for your program?

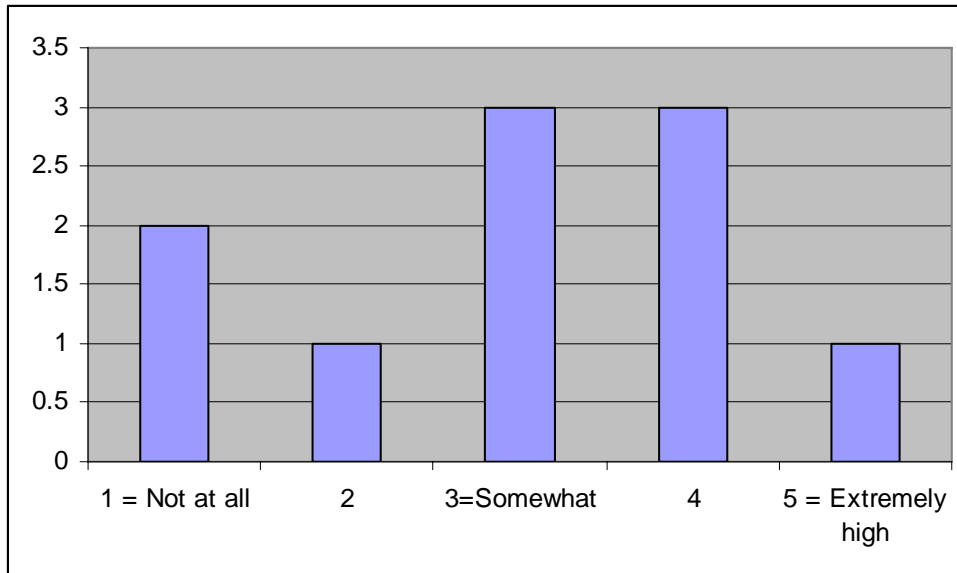


Center Staff Survey Responses

How do you assess/evaluate student performance?

- Journals, assignments, work evaluations
- Quiz grades, safety behavior, applied knowledge
- Tests, quizzes, observation, return demonstration
- Skills management
- Homework, quizzes, tests, hands on projects

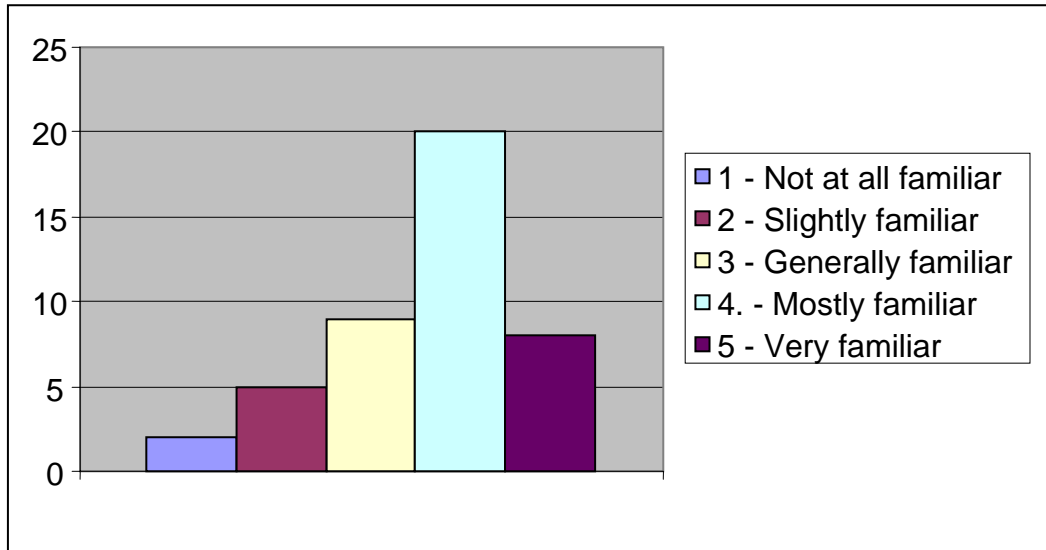
To what extent do you use assessment data to evaluate your program's performance?



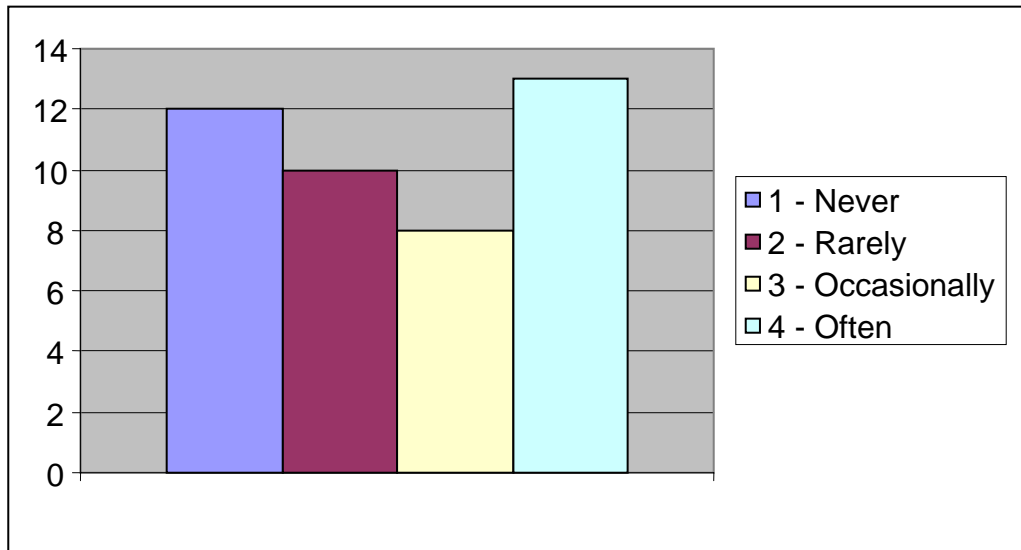
High School Faculty On-Line Survey Response

43 respondents

I am familiar with the programs offered at the Wilbur Palmer Vocational Technical Center.

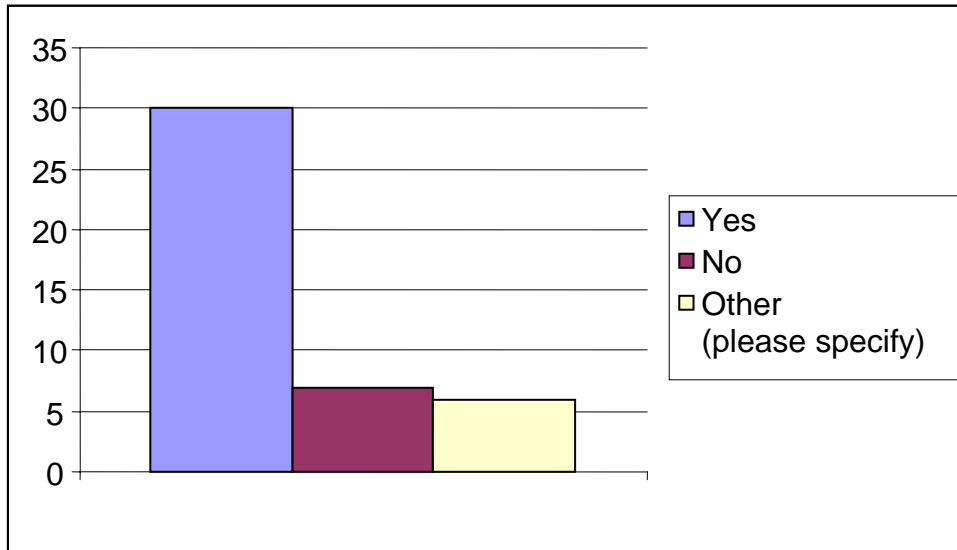


I have had the opportunity to work with a Center faculty/staff member on a student-related issue.

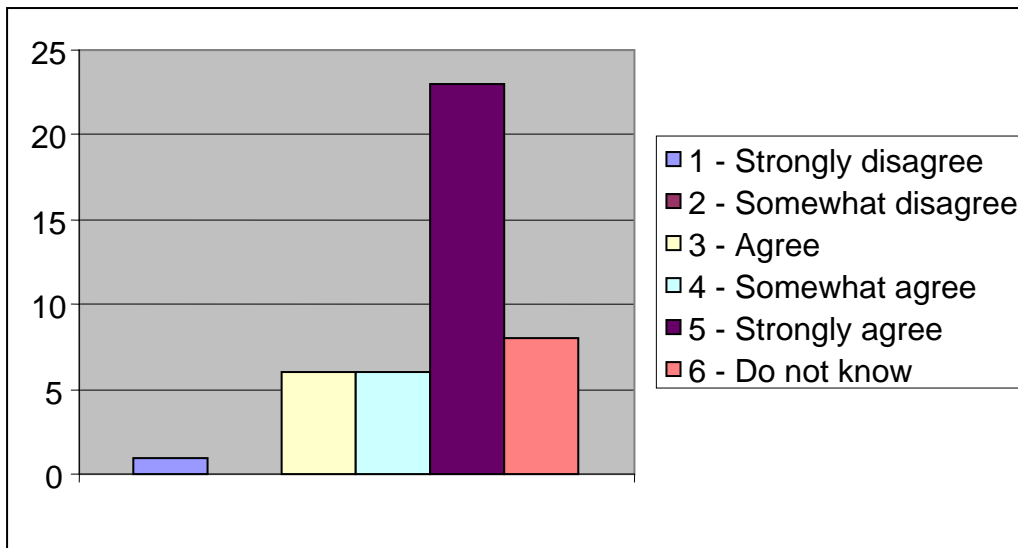


High School Faculty On-Line Survey Response

I would be interested in collaborating with Center faculty/staff on the development of integrated programs for students.



Overall I believe the Center is doing a good job preparing students for work and/or post secondary education.



High School Faculty On-Line Survey Response

What other comments would you like to make about the Center?

- I think that the Center is a wonderful resource for Alvirne students. It keep students engaged who might otherwise drop out of school. For students unaccustomed to academic success, it offers a positive way to build self esteem. Students involved in the CTE seem very connected to their respective programs, teachers, and peers, which is a testament to the dedicated faculty and the strength of the course offerings.
- I find that the center as a whole is very helpful to staff & students alike
- The students who are involved in the Vo Tech courses seem to share good commentary about what they do for work and projects. Right now, I don't see how I could link up with any staff member to integrate a program of study other than relating to the historical or cultural aspects of art that may overlap their learning.
- I think Alvirne is fortunate to have the center to instruct and educate students for successful transitioning into the community and the work force.
- I feel that there could be a lot more done with sharing of expertise both with and from the vocational areas such that improved learning could take place for students and teachers

- I think that the programs offered at the Voc center do a wonderful job of introducing students to many career opportunities.
- The staff in the voc department are wonderful. They obviously love their work and their students are very lucky to have such dedicated teachers.
- The effectiveness of the Center's programs vary considerably based on the classroom teachers.
- I would love to see more interdisciplinary activities and would be interested in helping to create such opportunities.
- I feel that the center provides a rich education and a wonderful variety of options to all our students!
- I'm proud to work for Alvirne, students have choices that so many other do not. Amazing opportunities!
- There is a type of student that absolutely needs and thrives in the programs that our vocational center offers. I'd like to think that having our vocational center helps to keep more students enrolled, gets more students engaged in a different type of hands on learning, and serves as an alternative training center to some two year college programs.
- Biology and the Alvirne farm and other parts of the vocational center have tremendous overlap. We use their resources when taking a "Biology Careers" walk at the beginning of the year, studying diversity in the Alvirne Tree

farm during population ecology, exploring symbiosis with cows and their bacterial partners as a great example, and hearing from the farm manager about biotechnology and embryo transplants. The vocational center and its coordination with the rest of the school make Alvirne the special place that it is.

Appendix B

Articulation Agreements

Program	College	Agreement
Academy of Finance	Daniel Webster College	<ul style="list-style-type: none"> ▪ Declare major in Bus. & Mngmt, Aviation, or Sport Mngmt, Information Systems or Management, or Information Technology. Fulfill application requirements
	NHCTC-Nashua	<ul style="list-style-type: none"> ▪ Complete course requirements for AOF, plus Accounting II with a grade of B or higher ▪ Submit signed copy of "Student Articulation Agreement Completion Form" with application. Fulfill application requirements.
	Rivier College	<ul style="list-style-type: none"> ▪ Complete AOF program requirements with a B or higher overall average ▪ Submit AOF Certificate of Financial Studies Fulfill application requirements.
	SNHU	<ul style="list-style-type: none"> ▪ Complete high school course requirements for AOF with a B or higher. ▪ Submit a letter of recommendation with application materials from AOF teacher or School to Career Coordinator ▪ Submit a copy of NAF Certificate of Financial Studies Fulfill application requirements
Biotechnology	NHCTC-Stratham	Program to program articulation agreement
Building Trades	NHCTC-Manchester	2 credits for Methods of Construction I Lab
Culinary Arts	NHCTC--Berlin	Students who meet required criteria may earn up to 12 transfer credits
Early Childhood Education	NHCTC – Nashua	Three credits for IntroEarly Childhood Ed for students mastering all competencies and a grade of B or higher
	Hesser College	C or better =6 elective credits; B or better=9 credits
Health Occupations	NHCTC-Stratham	Program articulation and 3 credits for Medical Terminology for those students enrolled in the Running Start Program.
Marketing	NHCTC-Nashua	Three credits for Principles of Marketing for students mastering all competencies with a B or higher in Marketing I & II
Multimedia	NHCTC-Stratham	Program to program articulation agreement
	NHCTC-Manchester	Program to program articulation agreement