

Research Report

May, 2004

Assessment of Higher Education Needs and Resources in Mt. Washington Valley

by Dr. Mary Ellen Fleeger,
University System of New Hampshire



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Executive Summary

The Mt. Washington Valley Economic Council (MWVEC) is committed to increasing access to higher education in the North Country, to exploring options that will lead to a collaborative community plan for what postsecondary education can and should become in the future, and to mutually agreeing upon major education services and sites. MWVEC has been keeping an eye on the future while balancing the learning needs of the present. This balance has been achieved by the mutual respect and a working experience between the business and education communities in the Valley. Recognizing the current limited array of postsecondary opportunities for Valley citizens, MWVEC appointed a task force of local business and education leaders to chart a course that would foster creative and proactive development in education and technology, and thereby position the community for an exemplary future.

To achieve this goal, the MWVEC task force collaborated with the University System of New Hampshire (USNH), specifically, Dr. Mary Ellen Fleeger, director of the Office of Research and Planning, to develop and implement a comprehensive higher education needs assessment in the fall of 2003 in 10 towns in Carroll County, New Hampshire, and two towns in Oxford County, Maine. The purpose of the Mt. Washington Valley Higher Education Needs Assessment was to collect and analyze data so that the educational and economic development climate of New Hampshire's North Country could benefit from a comprehensive, long-range plan to address current and future learning and career development needs of its constituents.

The task force committee sought to assess the learning needs of four distinct groups:

- 1) the higher education needs of high school juniors and seniors within the research region;
- 2) the higher education needs of alumni of New Hampshire's Community Technical Colleges (NHCTC) and the USNH College for Lifelong Learning (CLL) between 2000 and 2003;
- 3) the current, potential, and future workforce needs of employers; and
- 4) the general community member's desire for higher education.

The four stakeholder groups were surveyed using online and hardcopy questionnaires. A website was designed to enable responses via the Internet. Task force members worked to publicize the research project to ensure a good response rate, yielding 750 total responses from all sources.

The Mt. Washington Valley community is presently faced with an array of challenges involving demographic and economic factors, business community needs, and educational limitations. An important demographic challenge facing the region is the significant increase in aging population. Retiring baby boomers will leave a shortage of knowledge workers, and the remaining workforce will be less able to support income growth. Increased costs in services generated by the aging population will result in increased competition for funding between health and human services and education in the near future. Economic growth could be further limited by a shortage of trained workers.

Currently, Carroll County residents earn the lowest average weekly wages in the state, with two of its largest employment sectors—hospitality and retail—representing low-wage earning occupations (New Hampshire Department of Employment Security). A high percentage of residents are not prepared for higher-income occupations: 40 percent of residents between the ages 18 and 24 have less than a high school education and only 5 percent have a bachelor's degree (New Hampshire Office of State Planning).

High school graduates, NHCTC and CLL alumni, and the general public identify the primary obstacle to gaining a higher education as cost. Other predominant obstacles include limited course availability and scheduling and time. Business leaders identify the primary barrier to employee participation in higher education as a lack of educational offerings that directly respond to local business needs. Business leaders report expense as a secondary barrier, followed by a lack of offerings that meet employees' needs.

High school student responses indicate that the pipeline to higher education is broken. There is a discrepancy between aspirations and access. In this study, three-fourths of the students who responded stated they intended to go on to college, and yet New Hampshire statistics indicate that only 59 percent do; for a student from a low-income family, the college-going rate is only 42 percent (Mortenson 2000). Further, the majority of high school students surveyed reported that they wanted to leave the region to pursue a higher education. Many who will leave the area will not return after graduation.

In contrast, adults who want to further their education are seeking local options. Consequently, the primary audience for higher education in Mt. Washington Valley is adult learners who are interested in a wide variety of program types, creating a challenge for education institutions to attract a critical mass for any one academic program. In addition, adult learners favor a mixture of online and in-person learning at local sites. These diverse demands come at a time when governing bodies have increasing expectations for efficiency and accountability within its public institutions. Response to the economic challenges in Mt. Washington Valley will require a workforce that can keep pace with the explosion of knowledge and technology change. The Valley will need to

attract more new small businesses—a problematic endeavor without a supply of trained workers. In order meet this demand for a trained workforce, employers will need to help facilitate their employees’ education.

The Mt. Washington Valley community will need to consider a variety of possible solutions to address the major challenges created by an aging-in-place population, fractured higher education delivery mechanisms, a future deficit of trained workers, and inadequate funding for public higher education. The new Tech Village can be used to house both NHCTC and USNH to increase collaboration and avoid duplication between the public systems. The region can be aggressively marketed to attract and retain small business and entrepreneurial ventures as a measure to counteract the age wave effect. Multiple entry and exit lifelong learning options can be created to meet the diverse community and workforce needs. Business and education leaders can collectively work to increase funding for higher education in New Hampshire and to increase financial assistance and incentives for students.

The growth and diversification of Mt. Washington Valley’s economy will depend to a substantial degree on the success of small business and entrepreneurial ventures. Higher education can facilitate this effort by providing relevant education programs, technical assistance and advice, and accessible lifelong learning opportunities that will help individuals and small businesses succeed. Educators can incorporate an entrepreneurship focus into instruction and community outreach programs to facilitate the growth of entrepreneurship and small businesses. The tangible benefits of actions of this type will include a trained workforce for the future, higher spendable income for residents, a diminished fiscal drain on Carroll County and the state’s overall economy, and an increased quality of life for all. An integrated approach to long-term educational planning will facilitate economic stability, and thus sustainability for the Valley.

Acknowledgements

The author gratefully acknowledges the contributions of the following people, who participated either in developing the research survey or preparing this report: Betsy Bungeroth, Laurie Carrier, Pat Coogan, Bob Corrigan, Jac Cuddy, George Epstein, Nate Hughes, Erika Hunter, Barney Keenan, Dan Kennedy, Steve Knox, Dan Lee, Dan McCrum, Jeff Murray, Carl Nelson, Gail Paine, Rich Paiva, Gary Poquette, Steve Reno, Mike Russell, Ronda Boivin, Paula Hollis, Heidi Hedegard, Tia Miller, and Norma Meadows. Thanks to all of you.

Assessment of Higher Education Needs and Resources in Mt. Washington Valley

Introduction

The Mt. Washington Valley Economic Council (MWVEC) is committed to increasing access to higher education in the North Country, to exploring options that will lead to a collaborative community plan for what postsecondary education can and should become in the future, and to mutually agreeing upon major education services and sites. The council intends to identify strategies that will lead to an educationally and economically sound network of providers. As the environment for postsecondary education evolves and the demographics of the area change, the plan must be accepted and supported by both the education and business communities. Most importantly, it must reflect and value the aspirations and needs of current and potential learners. And finally, it must build upon the value that a broad, general education is the foundation from which individuals and the community can prosper.

The Need for the Research: Changing Times

Mt. Washington Valley residents talk about the high quality of life in the Valley. The community is safe, clean, physically beautiful, and full of outdoor activities, and its residents have a strong work ethic. However, there is only a limited array of postsecondary opportunities for its citizens. The MWVEC needs to chart a course for the community so that it can be creative and proactive in education and technology, and thereby position itself for an exemplary future.

Demographic Changes

The New Hampshire Department of Employment Security reports that “the state’s population growth rate dropped from being the 8th fastest nationwide in 2001 to being the 19th fastest growth in 2002.”¹ Of the six New England states, however, New Hampshire has the fastest population growth rate (1.2 percent). The state’s population increased in number by 15,697 from July 2001 to July 2002, reaching a total population of 1,275,056. Of that total population, more than 50 percent live in Hillsborough and Rockingham counties combined. New Hampshire population by county is represented in table 1.

¹ New Hampshire Department of Employment Security, Economic and Labor Market Information Bureau. *Vital signs 2004: Economic and social indicators for New Hampshire, 1999-2002* (January 2004), p. 1.

Table 1**New Hampshire Population by County**

NH County	Percent of Population
Hillsborough	30
Rockingham	22
Merrimack	11
Strafford	9
Grafton	7
Cheshire	6
Belknap	5
Carroll	4
Sullivan	3
Coos	3
Total #	1,275,056

2000 U.S. Census

Carroll County is projected to experience the fastest population growth over the next 25 years (41.6 percent increase), with Merrimack County projected to have a 33.9 percent increase. The remaining counties, except Coos, are projected to grow 25 to 30 percent over the same period. Coos County is projected to have the slowest population growth at 10.2 percent over the 25-year period. “The bigger and more populous counties in the south are the ones growing the most, whereas it is the medium and smaller sized counties that are the ones with the fastest growth. As Rockingham and Hillsborough get more saturated with population and business investment, the decentralization forces should expand toward the north and west.”² The median age of the state’s population has increased from 32.1 in 1988 to 37.9 in 2002, a development in New Hampshire that parallels the national trend attributed to the aging of the baby boomer generation. As the state’s population is projected to increase, so will the costs of local, state, and federal government services and infrastructures, including those of public higher education.

² *op. cit.*, p. 2.

THE IMPACT OF THE AGE WAVE

Currently about 18 percent (7,789) of Carroll County residents are age 65 and older. In another 20 years or so, approximately 40 percent (25,389) of Carroll County citizens will be age 65 and older. The impact of an aging population on Carroll County's skilled labor force and county-based resources will be significant.

The best-educated segment of the New Hampshire labor force consists of workers between the ages of 45 and 64. The development of this segment is a result of decades of in-migration of older well-educated "newcomers"; thus the education attainment of New Hampshire's older workforce is higher than that of the younger "born in New Hampshire" age groups. It is this population of well-educated in-migrants that is nearing retirement.

As this population exits the labor force, and as the demographic groups behind it are smaller in number and less well-educated, the remaining labor force is less able to support income growth and productivity, unless New Hampshire can continue to attract a steady supply of well-educated in-migrants and/or increase the educational attainment of its native born. The skilled labor shortages of the 1990s will appear minor compared to the longer-term shortages produced by the age wave.³

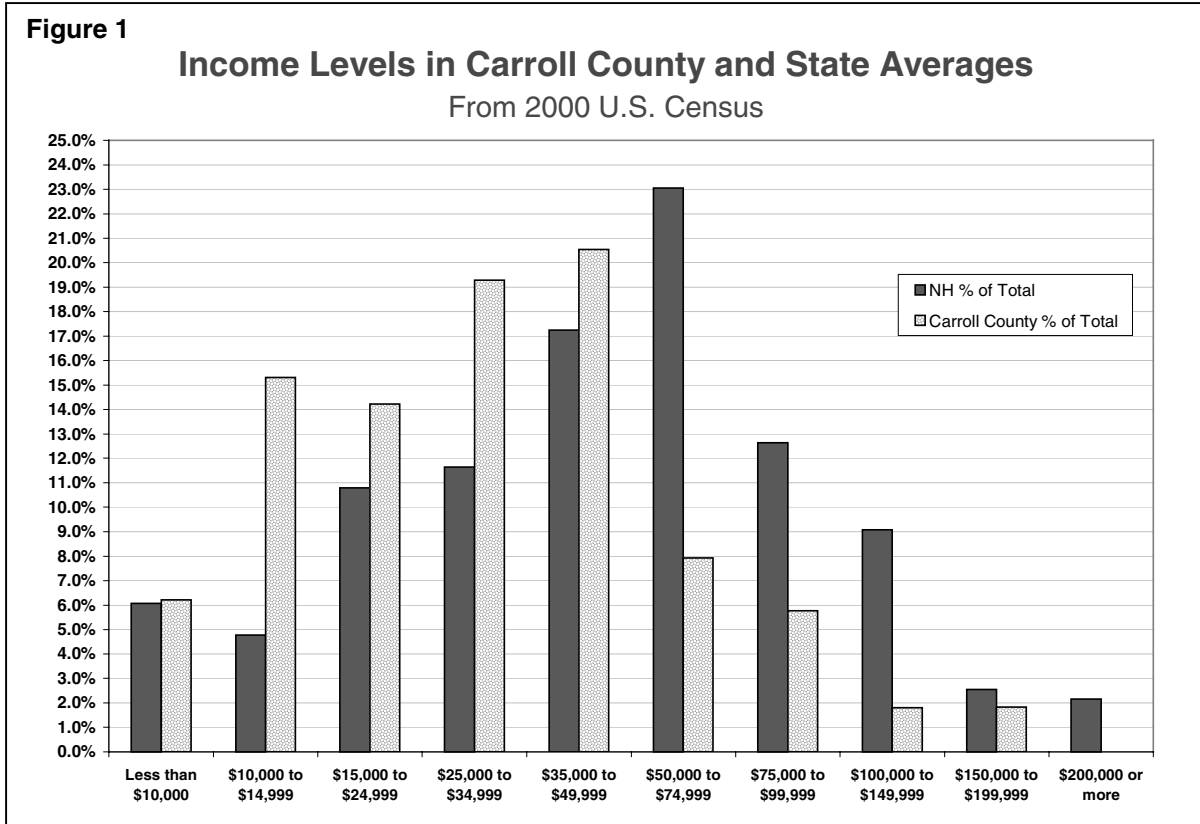
Counties, like Carroll, will be especially hard hit as many of the costs associated with the dependent elderly (e.g., the cost of nursing home care) will be borne primarily by the county. Based on the population projections discussed earlier, there will be approximately 17,600 more people over the age of 65 by the year 2025 than there are today. For every additional 1,000 elderly residents (age 65+) there is an associated overall budget impact of about \$18 million (distributed over many programs) per year.⁴ This means that the anticipated expenditure pressures associated with an additional 17,600 more elderly could amount to \$316 million in Carroll County alone over the 20-year period.

³ Gottlob, Brian J. *TrendLines NH*. PolEcon Research (October 2003).

⁴ Gottlob, *op. cit.*

CARROLL COUNTY POPULATION PROFILE

Residents of Carroll County tend to have a lower per capita income as compared to the overall population in the state. The 2000 U.S. Census data show that approximately 9 percent (3,900) of Carroll County residents were living at or below the federal poverty level. Comparatively, the state poverty level was 6.8 percent. Carroll County's per capita income was \$29,316 compared to New Hampshire's overall per capita income of \$31,325. Over a ten year period, Carroll County residents saw a 28.4 percent increase in per capita income, whereas New Hampshire as a whole realized a 33.9 percent increase (figure 1).



Educational attainment in Carroll County had not been realized by a significant percentage of its citizens. Nearly 40 percent of the people between the ages of 18 and 24 living in Carroll County had achieved less than a high school education, whereas about 5 percent had a bachelor’s degree or higher. Twenty-four percent reported having some college or an associate’s degree. About 32 percent of the 25-and-older population were high school graduates only, and 27 percent held a bachelor’s degree or higher. Approximately 13.2 percent of the 18- to 24-year-old residents of Carroll County were enrolled in college or graduate school. This compares to a national average of 34 percent.⁵ Table 2 depicts the current status of educational attainment in Carroll County.

Table 2			
Educational Attainment			
Carroll County Young Adults Education by Population		Carroll County Adult Education by Population	
ages 18 to 24		ages 25 and older	
Less than H.S.	~40%	H.S. only	32%
Bachelor’s or higher	<5%	Bachelor’s or higher	27%
Enrolled in college	13.2%		
Nat’l avg. in college	34%		

CARROLL COUNTY EMPLOYMENT AND WAGES

As shown in figure 2, accommodation and food services and retail trade were the two largest sectors in Carroll County, each claiming one in every five jobs in 2001. Carroll County’s share of employment in accommodation and food services was not only more than two and a half times that of the state, it was greater than any other county’s share. Employment in the retail trade sector in Carroll County was also the highest of any county in the state.⁶

Carroll County had the lowest average weekly wage among the counties at \$467.62 in 2001. This average weekly wage was approximately \$200 less than the state average, which is consistent with the fact that the two largest employment sectors in Carroll County represent generally low-wage-earning occupations. Accommodation and food services had the lowest average weekly wage in the county at \$276.04, which actually exceeded by \$6 the state’s average in this sector. The utilities sector, with less than one percent of the county’s total employment, provided the highest average weekly wage at

⁵ New Hampshire Office of State Planning (December 2002).

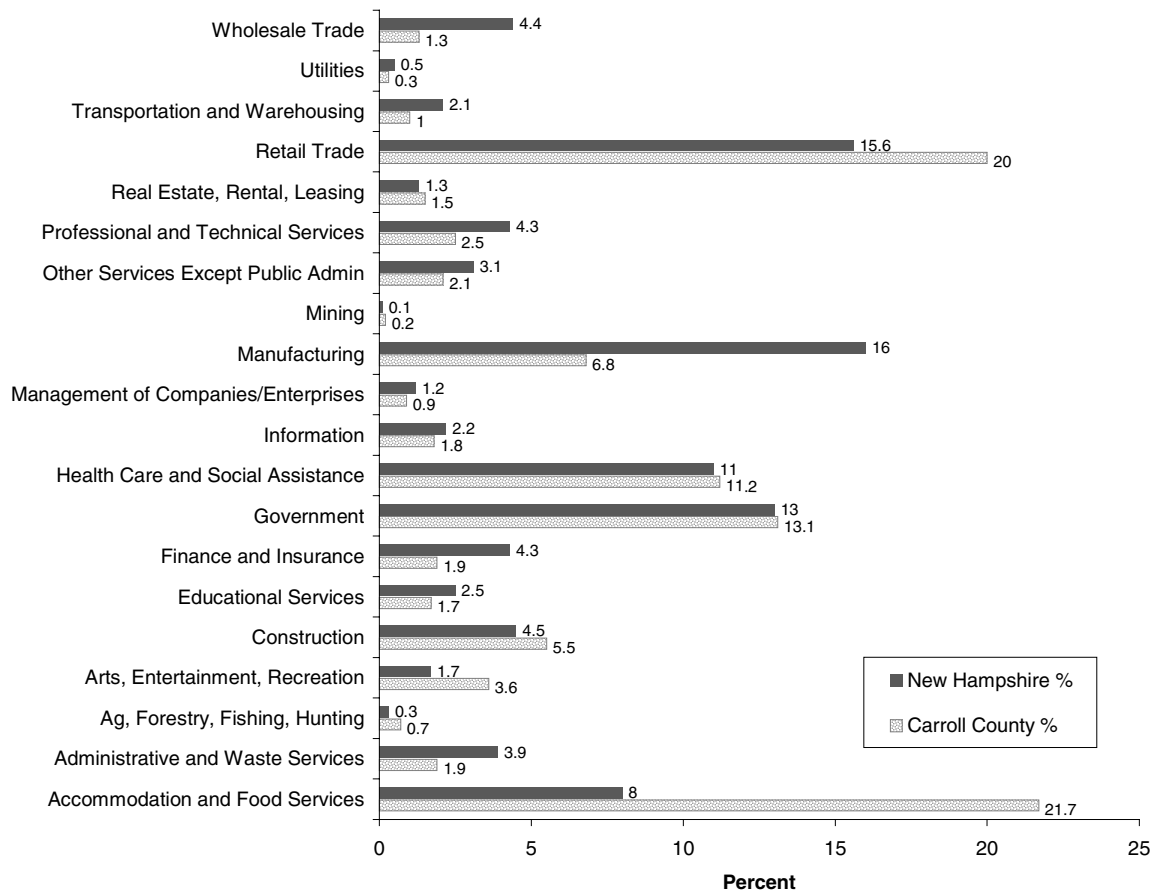
⁶ New Hampshire Department of Employment Security, Economic and Labor Market Information Bureau. *2001 New Hampshire county profile: A labor market information report* (May 2003), p. 14.

\$990.64, with the information sector—publishing and telecommunications industries in particular—coming in second highest at \$843.09.⁷

Figure 2

Employment Sectors: Carroll County vs. New Hampshire

Percent of Total 2001 Covered Employment by
North American Industry Classification Sectors (NAICS) and Government



Source: New Hampshire Department of Employment Security, Economic and Labor Market Information Bureau. *2001 New Hampshire county profile: A labor market information report*. May 2003.

Research Purpose

The purpose of the Mt. Washington Valley Higher Education Needs Assessment was to collect and analyze data so that the educational and economic development climate of the New Hampshire’s North Country could benefit from a comprehensive, long-range plan to address current and future learning and career development needs of its constituents (table 3). The MWVEC appointed a task force of local business and education leaders to collaborate with the University System of New Hampshire (USNH), specifically, Dr. Mary Ellen Fleeger, director of the Office of Research and Planning, to develop and

⁷ New Hampshire Department of Employment Security, *op. cit.*, p. 15.

implement a comprehensive higher education needs assessment in the fall 2003 in 10 towns in Carroll County, New Hampshire, and 2 towns in Oxford County, Maine. The 12 towns were Bartlett, Conway, Jackson, Chatham, Madison, Albany, Tamworth, Ossipee, Freedom, Eaton, Fryeburg ME, and Brownfield ME.

Table 3

Purpose: Increasing Access to Higher Education in Mt. Washington Valley

- Must reflect current and future educational and economic needs of residents
- Data needs to help chart course so county can position itself for exemplary future
- Communities in conjunction with higher education institutions will use the results to help to plan programs and avoid duplications

Specific areas of interest to the task force committee were the extent of higher education needs of high school students and adult learners; the current, potential, and future workforce needs of local businesses; and the general community member's desire for higher education. The committee determined that the results of the needs assessments would assist the MWVEC in acquiring quantifiable data from which to make community decisions for planning and implementing higher education opportunities in the North Country. This approach would include working with higher education institutions to help plan program offerings (and avoid duplication of services and programs), so that higher education access and attainment can be increased in the Mt. Washington Valley.

Research Objectives

Addressing the full scope of learning needs involves assessment of the current context and environment for higher education as well as the process for implementing change. Specific objectives of this committee included

- Identifying reasons why students do or do not choose to pursue postsecondary education, or why they may begin a program but leave without completing a certificate or degree;
- Assessing factors that contribute to visions and aspirations for higher education in the community;
- Identifying alternative strategies for meeting local higher education needs and describing likely implications of these strategies for community colleges and four-year colleges;
- Describing the impact a better-educated workforce could have on business and economic development and how higher education should be delivered in the future;
- Categorizing and quantifying types of educational programs desired by constituents;

- Describing the types of support employers currently provide or are willing to provide to employees desiring higher education.

Research Methodology

- Research subjects: Four different stakeholder groups were surveyed, yielding 750 total responses from all sources. The survey groups were
 - Eleventh- and twelfth-graders at Kennett High School, Fryeburg Academy, Community School, and Carroll Academy;
 - Business leaders who were members of MWVEC and the Mt. Washington Valley Chamber of Commerce;
 - Alumni of vocational-technical programs and associate's degree programs at NHCTC sites in Berlin, Gorham, and Littleton and alumni of associate's and bachelor's degree programs at CLL in Conway and Berlin;
 - The general public in the 12-town area.
- Survey instruments and subcommittee role
 - Members of the task force were assigned specific roles related to the development of survey instruments for the researcher.
 - Four separate instruments were developed:
 - High School Student Survey (Betsy Bungeroth, Carl Nelson, Dan Lee)
 - Business Leader Survey Parts A & B (George Epstein, Dan Kennedy, Erika Hunter)
 - Alumni Survey for Voc-tech and AA Grads – Certificate Programs from NHCTC (Gail Paine, Dan McCrum)
 - General Public Survey (Rich Paiva, Steve Knox)
- Questionnaires were developed for distribution in hardcopy and online. A website was designed for people to respond via the Internet.
- Random sampling was not used, so everyone who wanted to respond had the opportunity to do so.
- Committee members worked to publicize the research project to ensure a good response rate.

Timeline

The committee met throughout mid-July to mid-August 2003 to develop research instruments and identify sample populations and then locate access to names and addresses. During mid- to late-August, the researcher and committee members conducted pilot tests on the instruments, designed a response website, and developed a publicity plan. In September, data collection commenced and response reminders were sent. In October, data was analyzed and results tabulated. In November, initial results were presented to the committee members, and a final presentation was made at the December MWVEC annual meeting.

Survey Results

A total of 750 questionnaires were completed. Respondents included current high schools students (N=358), alumni graduating since 2000 from CLL at Berlin/Gorham, Conway, Littleton, and Sunday River and from NHCTC at Berlin, Laconia, Littleton, and Woodsville (N=182), and business leaders and owners (N=163). Some questionnaires were completed by the general public (N=47) who returned the survey after being invited to do so in the local newspaper.

Demographic Characteristics of Respondents

Alumni (table 4): About three-fourths of the respondents were female, and about three-fourths were married. Almost 75 percent worked full-time; only 1 percent was looking for work. It is interesting that of this group of graduates, nearly half received employer tuition assistance while they attended college. The mean age of graduates from NHCTC was younger than graduates from CLL.

Table 4

Alumni Survey: Graduates 2000–2003

Respondents N = 182

- NHCTC = 78
- CLL = 104
- 1/4 male, 3/4 female
- Majority married with children
- 72% work FT, 19% work PT, 5% looking for work, 3% not looking, 1% no response
- 46% had employer tuition assistance

High School Students (table 5): Nearly half of the total student respondents were from Fryeburg Academy and nearly half from Kennett High School; the remaining five percent were from Community School. Nearly equal numbers of student respondents were in grades 11 and 12, with about equal numbers male and female.

Table 5	
High School Survey	
<ul style="list-style-type: none"> • N=358 • Responses from <ul style="list-style-type: none"> ○ 43% Fryeburg ○ 52% Kennett ○ 5% Community School • Grade <ul style="list-style-type: none"> ○ 41% grade 11 ○ 48% grade 12 ○ Remainder unknown • About equal numbers male and female 	<ul style="list-style-type: none"> • Plans after completing high school <ul style="list-style-type: none"> ○ 72% attend four-year college ○ 8% undecided ○ 5% attend NHCTC ○ 4% attend technical school ○ 3% work full-time ○ 3% military • 76% plan to attend college full-time

General Public (table 6): Respondents were mostly female, over 45 years of age, had associate's or bachelor's degrees, and worked full-time; half were considering more education.

Table 6	
General Public Survey	
<ul style="list-style-type: none"> • Survey in local papers • 47 responses • Respondents were <ul style="list-style-type: none"> ○ Mostly female ○ Over 45 ○ AD or college grads ○ Worked full-time • Half considering more education • Type of program greatly varied • Reasons to further education (ranked) <ul style="list-style-type: none"> ○ Self-satisfaction ○ Increased salary ○ Job security ○ Increased status 	

Business Leaders (table 7): There was a great variety in the types of business represented in this respondent group. Of these businesses, 35 percent had fewer than 5 employees; 44 percent had 5 to 50 employees; 13 percent had more than 50 employees; and the remaining were sole proprietors. Half of the respondents expected stable employment growth; one-third expected their businesses to grow between one and five percent per year in the next five years.

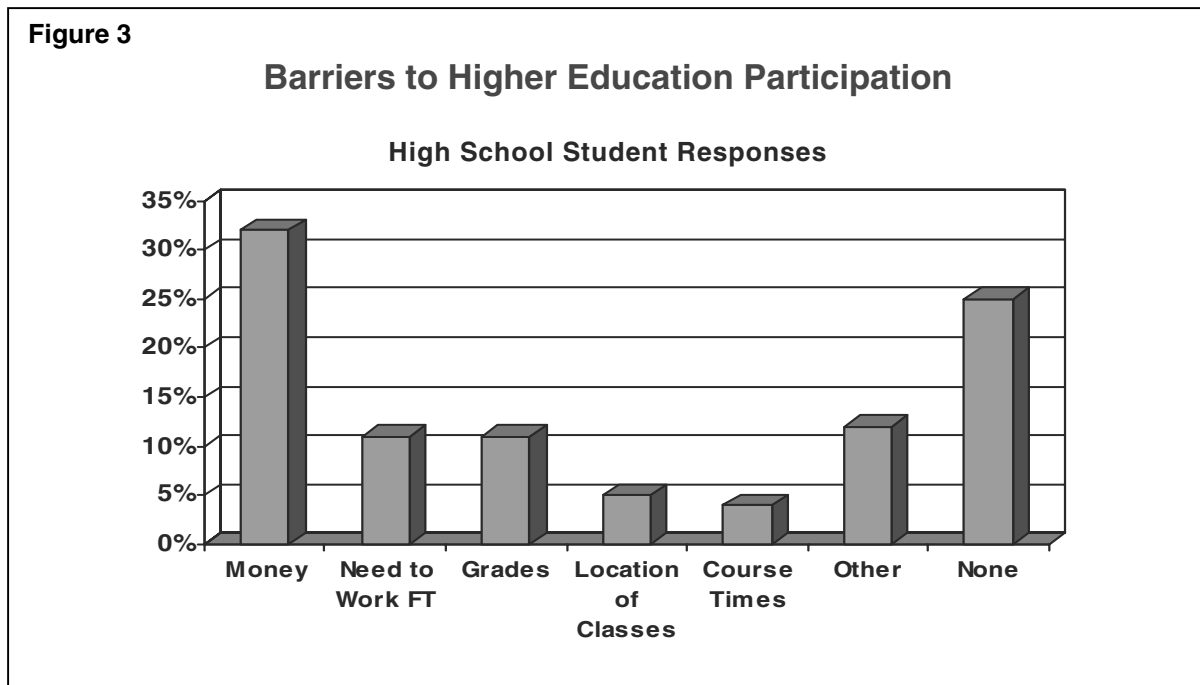
Table 7	Business Survey
	<hr/> <ul style="list-style-type: none"> • Currently provide education and training via <ul style="list-style-type: none"> 42% company trainers 18% USNH 16% distance learning 12% adult education 11% NHCTC • Offerings/trainings based on <ul style="list-style-type: none"> ○ Quality ○ Cost ○ Convenience

Barriers to Higher Education

All groups of respondents were asked to identify barriers to higher education access in the Mt. Washington Valley (table 8). Alumni from both CLL and NHCTC identified barriers (in rank order) as cost, course availability, time, and family responsibilities. Three-fourths did not identify child care as an obstacle.

Table 8	Alumni Survey: Graduates 2000–2003
	<hr/> Obstacles (ranked) <ol style="list-style-type: none"> 1. Cost 2. Course Availability 3. Time 4. Family 5. Distance 6. Childcare (3/4 report not obstacle) 7. Transportation

High school students identified major barriers to going on to college (in rank order) as money, need to work full-time, inadequate grades, and location and times of classes (figure 3).



General public respondents also reported the obstacles to higher education in the Valley were cost, distance, course scheduling, and course availability.

Employers were asked to identify barriers to participation in higher education for their employees. Employer responses included offerings don't meet needs of business, programs are too expensive, and offerings don't meet needs of employees.

Reasons to Go On to Higher Education and Selecting an Institution

Alumni identified the major reasons to go on to college were (in rank order) self-satisfaction, ability to increase salary, promotion/career advancement, and job security and increased status. The respondents in the general public group stated they were motivated to go on to college for the same reasons. An interesting finding comes from the high school students: three-fourths of respondents stated that they planned to go on to college; yet statistics indicate that only 59 percent of New Hampshire's high school graduates actually enroll in college, or 42 percent if from low-income families.⁸ According to survey responses, 72 percent of high school students planned to attend four-year colleges; 8 percent wanted to go on but were undecided about the type of institution; 9 percent planned to attend NHCTC; 3 percent planned to work full-time; and 3 percent planned to enter the military. The remaining high schools students did not respond to this question.

⁸ Mortenson, Tom. Postsecondary Education Opportunity 2000 reports.

The high school students were asked what factors influenced their decisions in choosing institutions of higher education. The factors identified were (in rank order) quality, affordability, location, size of school, and “my parents want me to attend a certain college.” High school students who had already applied to institutions of higher education were asked where they had applied (table 9).

Table 9		Where HS Students Plan to Apply...													
<ul style="list-style-type: none"> • Of the students who answered the question <table style="margin-left: 20px;"> <tr><td>UNH</td><td style="text-align: right;">68</td></tr> <tr><td>PSU</td><td style="text-align: right;">22</td></tr> <tr><td>KSC</td><td style="text-align: right;">17</td></tr> <tr><td>NHCTC</td><td style="text-align: right;">8</td></tr> <tr><td>Out of state</td><td style="text-align: right;">251</td></tr> <tr><td>Undecided</td><td style="text-align: right;">18</td></tr> </table>	UNH	68	PSU	22	KSC	17	NHCTC	8	Out of state	251	Undecided	18	<ul style="list-style-type: none"> • Almost all applied to 2 or 3 institutions, many to 4 and 5 • Few join the military • Out-of-state colleges (in rank order) <ul style="list-style-type: none"> ○ Maine ○ Massachusetts ○ Vermont 		
UNH	68														
PSU	22														
KSC	17														
NHCTC	8														
Out of state	251														
Undecided	18														

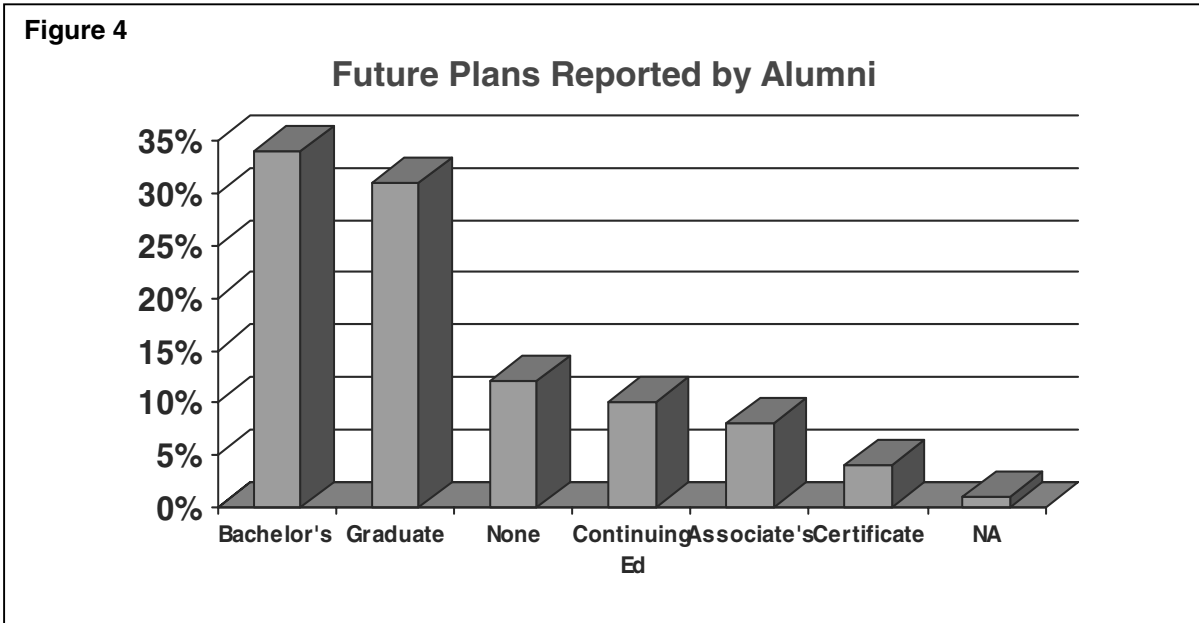
High school students were further asked if they planned to leave the state to explain why. The reasons provided (in rank order) were job/career opportunities better elsewhere, quality of life better elsewhere, and “just want to get out of town.” The students were then asked whether a broader range of academic programs offered in the Valley would cause them to consider staying in area. Thirty-nine percent said yes, 55 percent said no, and 6 percent did not respond. They were then asked if a broader array of programs were offered in the Valley, how much would the following items would influence their decisions to stay and participate in higher education locally (reported in rank order): receiving college credit, course availability, the campus, cost, course scheduling, and travel distance.

The business respondents reported that they chose to provide educational opportunities to their employees based (in rank order) on quality, cost, and convenience. The amount paid by employers was influenced by the perceived importance of the courses or programs to their businesses.

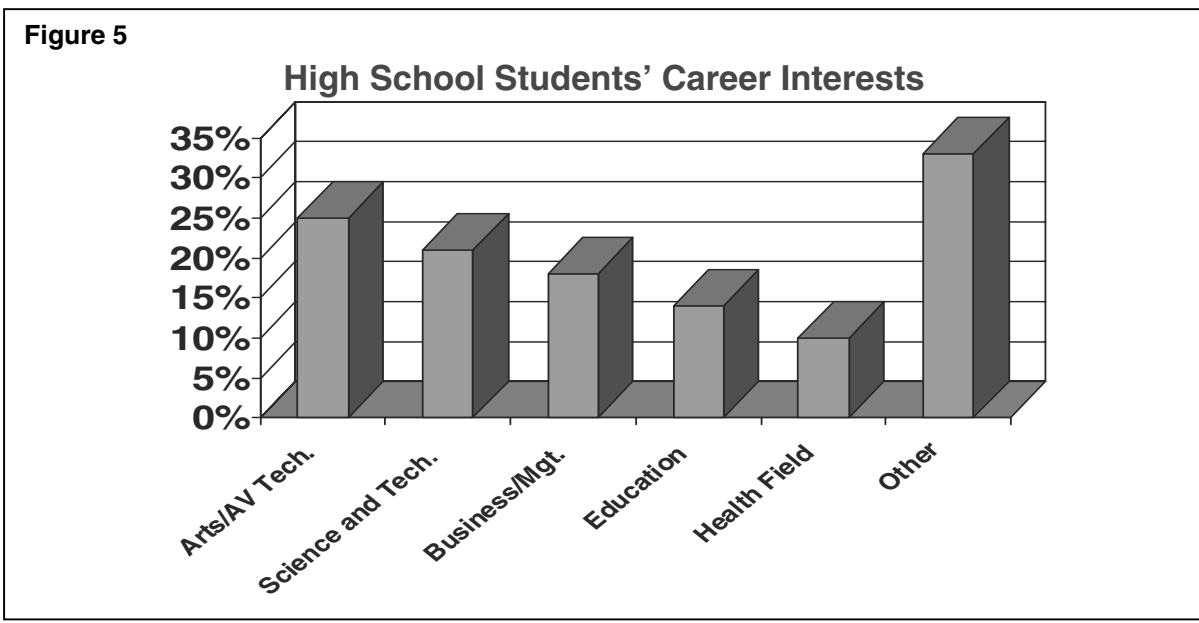
Academic Level and Delivery Preferences

Alumni and general public respondents across groups reported wanting a variety of academic offerings (e.g., graduate, bachelor’s, associate’s, specialized certification) by level of need. The primary audience requesting higher education services in the Mt. Washington Valley were adult learners. A majority of high schools students wanted to leave the area to pursue higher education. Respondents who had returned to school or had relocated in the Valley wanted higher education options locally. At CLL, of those desiring more education, 45 percent wanted a graduate degree program, 29 percent a bachelor’s degree, 1 percent an associate’s degree, 4 percent a certificate program, and 10 percent some type of continuing education; about 12 percent were not interested in

pursuing further higher education (figure 4). For the NHCTC alumni desiring more education, 13 percent wanted graduate-level education, 41 percent bachelor's, 17 percent associate's, 4 percent certificate, and 12 percent continuing education; 12 percent were not interested in pursuing further higher education.



As shown in figure 5, the types of education and careers high school respondents were most interested in also greatly varied. The major categories were arts and AV technology (25 percent), science and technology (21 percent), business/management (18 percent), education (14 percent), and some type of health care field (10 percent).



When high school students asked how they preferred to take their classes, 86 percent wanted direct instruction in a classroom, 76 percent wanted day classes, 14 percent evening classes, 4 percent weekend classes, and 8 percent wanted web-based classes.

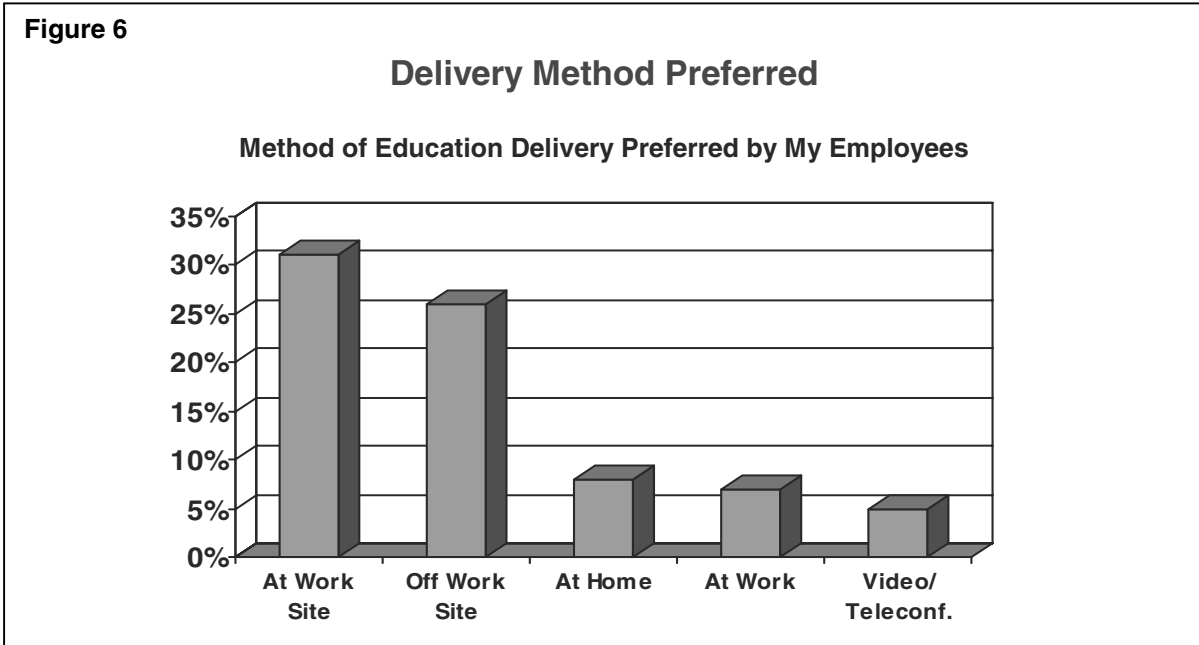
Alumni were most interested in continuing their education while they continued to work (table 10). More than half had not taken college courses since graduation. Alumni reported the following preferences for course delivery (in rank order): on-campus evening classes, a mixture of classes online and in-classroom, weekend classes, and one- to two-week summer institutes. The least desirable were online-only classes, teleconferences, and video conferences. General public respondents favored a mixture of online and classroom-at-work-site classes, one- to two-week summer institutes, online-only classes, and weekend classes. Less desirable delivery options included traditional day classes, teleconferences, and video conferences. Half of the general public respondents reported they were considering more education.

Table 10

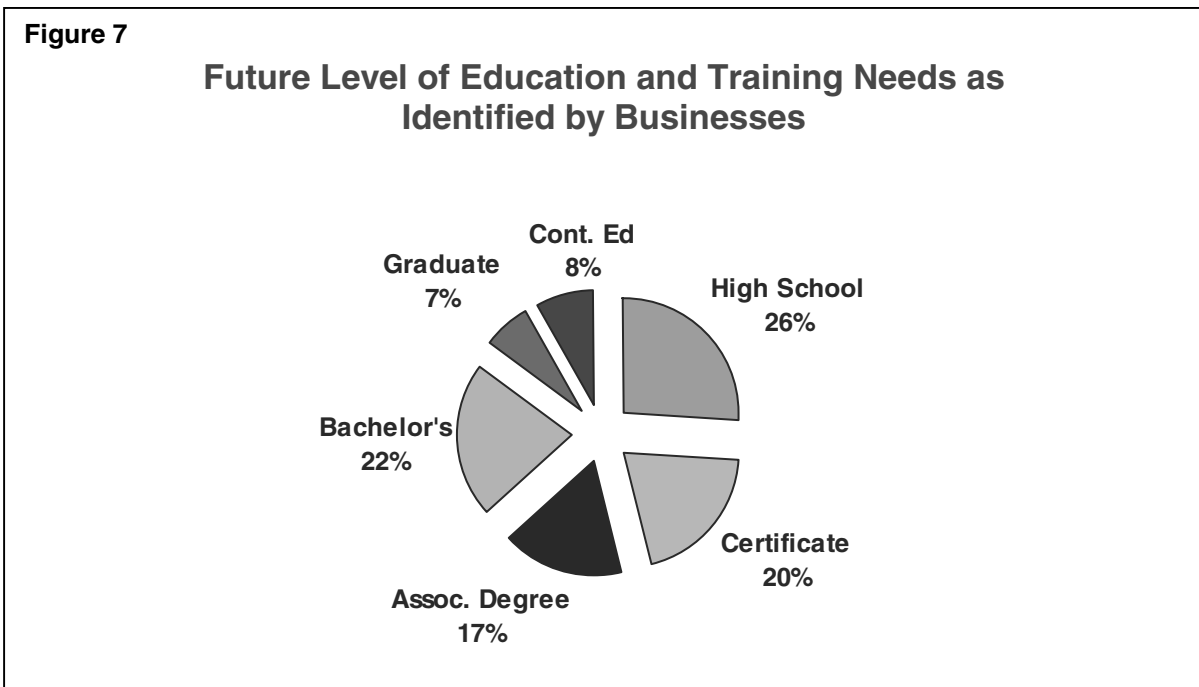
Alumni Responses

- Programs/courses wanted greatly varied, few in any one specific area
- Most desired:
 - Variety of graduate programs
 - Variety of undergraduate programs
 - Management
 - Health care
 - Computer technology
 - Computer information
 - Accounting

As shown in figure 6, business respondents reported the methods of education delivery preferred by their employees, with “at the work site” reported as most desirable.



The levels of education identified by business leaders as needed for their workforce also varied greatly. However, about three-fourths of these leaders indicated that the workforce of the future will need more than a high school education (figure 7).



Business leaders were also asked to identify the course delivery times of their employees. Responses were (in rank order) half-day seminar during work day, one evening/week seminar, and half-day seminar not during work day. Business leaders emphasized the fact that education and training should be designed for the learner and not for the convenience of the instructor or the institution. Some business respondents expressed concern that the training needed for their employees was too specific and related only to their particular types of business.

Local businesses were also asked about current practices related to offering education opportunities. Forty-two percent reported using company trainers, 18 percent used a training option from a USNH institution, 16 percent used some type of distance learning, 12 percent used adult education programs, and 11 percent used NHCTC programs.

Funding Higher Education

When asked how they expected to finance their college education, high school students responded that parents would pay part and financial aid would pay part (32 percent), parents would pay part and student would also work (19 percent), and parents would pay for everything (12 percent). The remaining 15 percent responded “other,” which included “not sure,” military will pay, and scholarships.

Business respondents were asked about the assistance they currently provided to employees to help facilitate educational goals. Of the respondents, 44 percent provided some type of tuition reimbursement. The amount and practice of tuition assistance varied greatly: several employers paid 100 percent, some paid 50 percent, some paid a set amount per employee per year, some paid on a case-by-case basis, and some reported having no set policy. The amounts of assistance ranged from \$75 to \$3,000. In addition to tuition assistance, 43 percent of employers provided release time from work. Less than 25 percent of employers did not offer any type of employee educational assistance program.

Employers were asked what types of assistance their businesses could provide to colleges to help North Country citizens to access higher education in a cost-effective manner. Responses included professional staff expertise (37 percent), use of on-site space (31 percent), use of company equipment (18 percent), and partial cost reimbursement (15 percent). Only 18 percent reported they could not offer support.

Conclusions and Recommendations

Economic Changes

Employers are demanding a workforce that can keep pace with an explosion of knowledge and rapid technological change. Corporations and business are purchasing increasing amounts of education and training services, often from third-party vendors, to meet needs quickly for employee knowledge and skills closely related to job-specific requirements. Businesses are seeking technical assistance in using technology to become more productive and profitable.

Economic growth could be limited in the North Country due to a shortage of workers, especially those with technical training. Postsecondary institutions will need to respond rapidly to employer needs and become increasingly flexible in course content and in the use of technology for the delivery of instruction. Institutions will see a growing demand from business for specialized knowledge and skill certifications in professional, vocational, and technical areas, such as information technology, to meet workforce needs. The state may need to consider incentives for recruiting and educating students in targeted workforce shortage areas. Advances in information technologies will create expanded opportunities for businesses to locate production facilities at sites remote from their central offices.

Political Changes

State and national policymakers increasingly expect measures of accountability and performance from higher education institutions. State leaders are examining potential and perceived duplications of higher education delivery services. Competition for funding among educational institutions and with health and human service organizations will continue to increase and will create tension among competing organizations, especially in Carroll County with its aging-in-place citizens.

Changes in Higher Education

In order to enhance and understand the challenges facing higher education in the United States, stakeholders must understand the major forces that are shaping the future of higher education. These forces, as summarized in table 11 by the researcher, also influence the decisions that Mt. Washington Valley citizens and New Hampshire public institutions will make in order meet the educational needs of the community.

Table 11		Higher Education PARADIGM SHIFT	
Previous Way of Doing Business	→	Future Way of Doing Business	
Individual campus/institution center	→	Business, community, other education systems work together	
Free-standing facility	→	Integrative facility, distant sites	
Competing institutions and units	→	Shared power and resources	
Independent institution	→	Part of a community of educational institutions (K–16)	
Traditional programs and degrees	→	Alternative certificates, degrees, learning opportunities	
Campus-owned technology	→	Shared technology across systems	
Students/parents passive about price	→	Students /parents shopping for best price and financial aid package	
Student as recipient	→	Student as participant	
Individual, traditional age student	→	An entire population—across the lifespan—of learners	
Begin and end at same institution in four years	→	Consumers discover/adopt nontraditional solutions or multiple pathways/transfers	
Student comes to us; professor as “sage on stage” concept	→	We take learning to them using multiple teaching modalities	
State and federal legislation left higher education alone and funded at acceptable levels	→	Legislatures investigate practices, prices; provide minimal fiscal support	
Respond to problem. <i>Fix it</i> approach.	→	Assess needs and plan from valid and reliable data. <i>Create it</i> approach.	

Developed by M. E. Fleeger (fall 2003).

Other changes specific to New Hampshire include a decreased number of high school students in the near future, resulting in a decline in high school graduates beginning about 2008. Provisions for educating nontraditional learners will also need to increase. The NHCTC’s recent accreditations encourage expansion of associate’s degree programs, increased articulation with USNH, and new academic offerings. Both the cost of education for taxpayers and the price of education for students and parents are rising faster than general inflation. More students will use student loans to fund their education and more will be employed while in college, which typically adds to the time it takes them to complete their education.

As the cost of education continues to escalate, institutions increasingly will look toward methods of collaboration with other institutions to become more efficient. NHCTC and USNH already have more than 70 articulation agreements in place. Articulation agreements between institutions or systems allow students to build on academic course sequencing and programs from one level of education to another. The benefit of articulation agreements is that students can have their prerequisite course and general education course requirements completed, facilitating a seamless transition into another program at a different institution. This saves time and money for the student.

In addition, the role of faculty will continue to change as a result of the use of technology to deliver courses off campus and to bring new resources into the classroom on campus—and not all faculty embrace this new role. Faculty will be expected to be proficient in the use of new teaching technologies, and many will be more actively involved in developing technology-mediated course materials in addition to their other responsibilities. Further, faculty will need to travel from their main campuses to distance sites to meet the desires of place-bound students for some face-to-face interaction with the professor.

USNH Role

All citizens in New Hampshire's North Country deserve reasonable and affordable access to higher education appropriate to their individual needs and abilities. Residents will benefit from a comprehensive network of diverse and high quality postsecondary education institutions that maintain distinct but complementary roles and missions. Higher education plays an important role in supporting Mt. Washington Valley's economic goals by contributing to a competent and competitive workforce by ensuring lifelong learning and training opportunities. USNH is committed to making wise use of resources for programs, services, and facilities and to avoiding unnecessary duplication.

USNH Chancellor Stephen Reno articulated the following goals and commitments for the 2003–04 academic year:

- Increase participation and success in higher education, including by low-income and underrepresented populations, to ensure that access to programs and services at higher education institutions is not restricted by factors such as geographic location, economic status, age, gender, or ethnic origin.
- Remain student-centered; offer lifelong learning opportunities that are responsive to students' needs.
- Provide appropriate support services to help all students achieve their educational goals, regardless of where or how the instruction is delivered.
- Provide graduates with the skills and knowledge needed to succeed as capable employees and responsible citizens.
- Be responsive to workforce development and ongoing training needs of employers and industries in the Mt. Washington Valley, helping them attract and retain a knowledgeable, trained, and skilled workforce.
- Assess evolving needs and priorities of the students in the Mt. Washington Valley in a timely manner, so faculty can be prepared to change and adopt new methods and technologies to address them.
- Collaborate with business and other educational institutions whenever appropriate to share resources and deliver programs cooperatively in order to enhance learning opportunities for area residents.
- Increase the number of articulation agreements between NHCTC and USNH.
- Form partnerships with area K–12 schools to improve teaching and learning at all levels and to facilitate the transition from one level of education to another.

The Proposed Mt. Washington Valley Technology Center

Cooperative ventures among business, NHCTC, and USNH should increase via a community-based learning center. Participation in learning centers and educational consortia can increase access to and participation in higher education. This option could bring beneficial programs to this region of the state while saving money for the state and its students (in travel, relocation, time away from work). The successful development and operation of a center is dependent on the collaboration and commitment of the community, state, and postsecondary institutions. New Hampshire's public institutions have done a remarkable job bringing higher education to the Mt. Washington Valley; the infrastructure is in place to continue to grow and expand the programs and services. Results of this survey indicate an interest in even more opportunities to meet the educational needs of the citizens. Expanded use of electronic distance learning and other instructional technologies will need to be used to broaden access to postsecondary education in this region. Geographic boundaries and remote locations present some obstacles, but the use of mixed modalities for course delivery could help resolve these challenges.

Issues for Students

Time to Degree: Students, institutions, and employers all share an interest in timely progression throughout postsecondary education into the workplace. Programs must be structured with consideration for time to degree as well as for ensuring competency in required knowledge and skills. Flexibility in course scheduling, such as adapting to the schedules of working students and their employers, facilitates program completion and satisfaction.

Articulation: Students do not come to postsecondary education with equal preparation levels, yet each student deserves the opportunity to progress through higher education to the level that meets his/her educational and career goals. A truly coordinated system for Mt. Washington Valley residents will facilitate opportunities for individuals to move easily from one sector of postsecondary education to another, as their abilities grow and their needs, interests, and educational goals shift. Clearly-defined and marketed articulation agreements between NHCTC and USNH will benefit all students—those new to higher education, those needing retraining, and those who want career changes. Developing a system of dual enrollment will further enhance articulation. Graduation accountability measures that reflect four- or six-year graduation rates are probably not appropriate for this group of students.

Student Support Services: Students drop classes and leave institutions for a variety of reasons, many beyond the control of the institution. However, a comprehensive mix of student support services can make the difference in retaining students and helping them succeed and are fundamental to the students' overall college experience. Student support services include tutoring, mentoring, and counseling programs, distance access, library holdings, business services, online class announcements, computer support, and adequate physical facilities. Support services must be provided to help all students regardless of where and how the instruction is delivered. Having NHCTC and USNH work together, cross-trained in some advising areas, will further assist students to achieve their goals through multiple entry and exit points along the knowledge path.

Workforce Development Changes

Shortages of skilled and trained workers in certain fields exist across the state. Each day technology transforms how and when and where business is conducted, creating an ongoing need for employee training and retraining to stay current and viable in an increasingly competitive and global market. Finding ways to operate more productively and effectively is critical to a business's growth and survival.

New Hampshire's North Country has an additional challenge—that of encouraging businesses to locate in an area that does not have an abundant supply of trained workers. Increased access to higher education programs is needed to build this workforce. The future of the economy in this region is dependent on a partnership with education institutions to secure skilled and knowledgeable employees for innovative and progressive businesses, industries, and services. The following are four steps that could be taken to enhance the educational development of the North Country workforce.

First, in addition to specific industry skills, employers need college graduates who have good oral and written communication skills, computer competencies, general workplace skills, and, increasingly, conversancy in more than one language. This demand may require that institutions respond to workforce needs by developing, offering, and promoting degree or certificate programs in certain geographic areas and in high-demand programs. This could be achieved by creating “portable programs,” which are designed to educate specific cohorts within a geographic area; once the education needs are met, the program would move to another geographic area in the state.

Second, providing in-home or workplace distance learning opportunities of high quality and reasonable price will be essential to help workers to remain current in their fields or to move into new careers. Enhanced collaboration between colleges and industry needs to occur to improve availability of in-service training, as well as identify training opportunities to address changing workforce needs. Specific business training programs (aside from degree programs) in a certain geographic area may need to exist within a consortium of like-businesses in order to obtain a critical mass of learners and make the program cost recovery for the offering institution.

Third, enhancing educational and workforce development opportunities for populations who have been underrepresented is critical for attracting enough young people to enter the North Country workforce. Work with middle schools and high schools to encourage students to complete high school and take courses that will help them succeed in college has already begun; however, there needs to be a sustained and consistent effort to direct this targeted group on to college. This kind of effort requires more fiscal resources than the educational systems (K–16) currently have, and the state needs to examine its role in funding this effort. The challenge of this effort is compounded by the fact that many school districts are finding it difficult to attract and retrain qualified teaching staff given an aging workforce, salary levels that are marginally competitive with those in neighboring states and within private industry, and tax restrictions. Education leaders and policymakers should be encouraged to address workforce needs for new teachers and continued education for practicing teachers in the area.

Finally, reasonable support from the business community to provide tuition assistance and time off for training is evident, and further support is possible. By offering fiscal incentives for education completion that induce the student to remain with a business after graduation, businesses can further help to build the North Country's workforce of tomorrow. Designing and supporting internships and other community experience programs so that graduates will stay in the area will be additionally beneficial. Positive experiential opportunities introduce the learner to the professional workforce and provide the organization with an already-trained and knowledgeable worker.

Summary

The growth and diversification of the Valley's economy will depend to a substantial degree on the success of small business and entrepreneurial ventures. Higher education can assist by providing education programs, technical assistance and advice, and accessible lifelong learning opportunities that will help individuals and small businesses succeed. Educators can incorporate an entrepreneurship focus into instruction and community outreach programs to facilitate the growth of entrepreneurship and small businesses.

The Mt. Washington Valley needs to assist in creating the workforce of the future. More high school graduates need to go on to college, and more young adults in the Valley need to go on to higher education to divert the age wave problem. While there is a need for a variety of college education programs, there is a high demand in particular for environmental disciplines, outdoor recreation, gerontology and allied health sciences, technology, and teacher education. Opportunities for collaboration, cooperation, and sharing of resources to educate the workforce of the future needs to be a high priority for all.

The economic impact resulting from an uneducated population is a serious problem for the North Country. Professor Ross Gittell of the UNH Whittemore School of Business and Economics has calculated the returns on investment in higher education: "In each high school graduating class, shortcomings (in counties below the statewide matriculation to postsecondary) in graduates going to college results in loss of income of \$10 million per year in the state. With multiplier effects in the economy, each 20-year generation loss from low matriculation to four-year colleges is about \$500 million, or one percent of the state's overall economy."⁹

To correct this downward spiral, Mt. Washington Valley needs to design a plan to provide multiple points of entry and exit for students throughout a higher education continuum. A variety of delivery modalities will need to be used. For some students, the "campus" will be their computer at home or wherever a laptop can take them. However, this will not be the solution for everyone due to inaccessibility to high speed connectivity in some areas. For other students, a learning center or job site can serve as the campus. How institutions bring academic and student services to this geographically diverse student population is a challenge in facilities and personnel planning. NHCTC and USNH

⁹ Source: Gittell, Ross. *NH Higher Education Demand* presentation (February 2004).

need to explore options for facility use, increased program articulation, and cross-trained support staff. Working with the Mt. Washington Valley Economic Council, an integrated approach to long-term educational planning will facilitate economic stability, and thus sustainability for the Valley.

One thing is certain, adequate, stable, and long-term funding for higher education will be required to keep everything in the Valley from “aging.”



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