

ALIGNMENT OF POSTSECONDARY EDUCATION AND EMPLOYMENT

Introduction

- Numerous reports have identified an increasing gap in how well Connecticut prepares its workforce for the demands of current and near-future employment.
- The briefing report found an overall lack of alignment of postsecondary education and employment for a majority of the occupations examined.
- This report recommends potential solutions to overcoming barriers to alignment, drawing on lessons learned from the detailed examination of the strategies used to successfully align postsecondary education and employment in the nursing profession as well as information learned in studying the emerging green collar jobs field.

Section I: Green Collar Jobs

- The green movement is being **driven** by:
 - Federal stimulus funding from the American Recovery and Reinvestment Act of 2009, with more than \$120 million awarded to Connecticut to date;
 - Governor Rell's Executive Order No. 23, which established a blueprint for green collar jobs creation;
 - Recent Connecticut statutory changes promoting green building code requirements, and implementing green strategies through the Connecticut Clean Energy Fund and the Connecticut Energy Efficiency Fund; and
 - Private sector companies and initiatives in the energy sectors.
- How green collar jobs are being **defined**:
 - Knowing which occupations are considered green collar jobs is a prerequisite to: estimating the size of the current green collar workforce; projecting future employer demand; and delivering education and training needed for green collar jobs.
 - There are a multitude of green collar job definitions.
 - In general, green collar jobs occur in settings with a goal of improving or preserving the environment by using less energy (energy efficiency) and/or alternative sources of energy that are not harmful to the environment (renewable energy).

Key Points

- Green collar jobs can fall into one of three categories:
 - Green *increased demand* occupations – existing occupations performed within a green setting (e.g., chemical engineers);
 - Green *enhanced skills* occupations – existing occupations requiring additional green skills and knowledge, and perhaps new credentialing (e.g., plumbers); and
 - Green *new and emerging* occupations – new occupations that arose due to the green economy (e.g., carbon trading analysts).
- The present general lack of consensus on what constitutes a green collar job has led to estimates on the current size of Connecticut’s green collar workforce, ranging from 5,493 to more than 22,000 individuals.
- Regardless of the methodology used to define green collar jobs, all findings show an increase in green jobs.
- Licensing assures consumers that practitioners have a basic level of competency, although there is currently very little regulation of these new and emerging occupations.
 - There are also national certifying organizations that are attempting to establish professional competency standards that are recognized by others in the green field.
- Who is **developing** the green collar field and future job opportunities:
 - There are many state agencies and private organizations working on green collar job initiatives in Connecticut, and consortiums and partnerships are currently being formed or shaped.
 - The Connecticut Business and Industry Association and private companies are also active in developing the green collar field.
 - Future job opportunities are projected to occur in a wide range of green occupations, from hydrologists to water and liquid waste treatment plant and system operators.
- **Delivering** education and training for green collar jobs:
 - Over half of green collar jobs may not require any postsecondary education or extensive on-the-job training.

Key Points

- These low paying, low skill level jobs can be viewed as part of a career ladder or lattice, leading to financially adequate jobs.
- Overall, the higher education institutions are contributing to creation of the near future green collar workforce in one of five ways:
 1. offering majors or minors in directly related fields such as environmental science or environmental engineering;
 2. offering majors or minors associated with the green movement (e.g., marine biology, meteorology, electrical engineering);
 3. establishing centers or institutes directly related to renewable energy, energy efficiency, or other green related areas (e.g., Institute for Sustainable Energy at Eastern Connecticut State University);
 4. offering certificates in green collar fields (e.g., water management, alternative energy transportation, solar energy technologies); and
 5. offering individual courses to add green collar skills and/or knowledge (e.g., environmental regulations, water resources engineering, alternative building systems).
- Education and training for green collar jobs is also being delivered by the technical high schools, Connecticut Clean Energy Fund, for-profit institutes, unions, and national training organizations.
- Possible barriers to alignment in the green collar jobs area are:
 - Lack of awareness or understanding of what green collar jobs are by elementary and secondary school students, parents, teachers, and guidance counselors;
 - No central repository for the many green initiatives emerging across higher education (e.g., new degree and certificate programs and stand-alone courses, and new center/institute initiatives);
 - Few resources apart from ARRA stimulus funds to purchase the expensive equipment required to train students;
 - Lack of career ladders/lattices to move individuals out of entry-level green collar jobs that are dependent on temporary ARRA funding; and
 - Lack of awareness by colleges of green efforts occurring within other

colleges in different higher education systems.

Section II: State Efforts to Address Workforce Shortage of Nurses

- The strategies used to increase the number of nursing program graduates to address a serious nursing shortage that began in the late 1990s were examined to determine if similar strategies could be adopted for other workforce shortage areas.
 - In 1998, there were 318 individuals who passed the practical nurse national exam and were eligible for licensure as an LPN, and by 2008, there were a total of 727 graduates who passed the exam and were eligible for licensure.
 - There were 1,118 graduates of entry-level RN nursing programs in 2007-08 compared to 594 in 2000-01, the low point over the ten years examined.
 - In 2006, DOL projected over the next ten years there would be 1,114 average annual openings for registered nurses (RNs) and 324 average annual openings for licensed practical nurses (LPNs).
 - Comparing Connecticut DOL projections on the number of annual openings for nurses for 2006 to 2016 to the number of individuals taking the RN and LPN licensing exams indicates that supply and demand are equal for RNs and that there is an oversupply of LPNs.
 - However, there are many unknowns in the future, especially regarding the expansion of health care. In addition, a recent study found baby boomers are facing higher disability rates as they age than the previous generation, which will increase demand.
 - The literature reviewed indicates that nursing shortages are cyclical and during times of high unemployment, nurse supply is not as low as in better economic times. These studies have shown that more nurses work in direct care, full-time, and re-enter the workforce during economic lows.
 - Active participants in developing solutions to the potential public health crisis beginning in the late 1990s included the executive and legislative branches of government, the education and higher education departments, the four higher education constituent units (acting in concert or independently), independent colleges and universities, and the state's hospitals and other health care facilities.
-
- Strategies used to address the nursing shortage could be applied to other shortage

Key Points

areas and include:

- public advertising campaigns to increase awareness of nursing as a career;
- initiatives at the high school level to interest students in health careers, including nursing;
- aggressive pursuit of funding by colleges and universities, both to provide tuition assistance, student advising, and targeted tutoring to increase student retention;
- federal and state scholarships and loan forgiveness programs;
- grants to colleges and universities to establish or expand their nursing programs;
- collaborative partnerships between colleges and universities with nursing programs and area hospitals; and
- a formal mechanism, such as the Allied Health Workforce Policy Board, for members to communicate and share strategies, and propose solutions as a unified body.

Section III: Recommendations to Address Barriers to Alignment

- To overcome barriers related to elementary and secondary school students:
 - strengthen high school graduation standards; and
 - increase efforts in high school to reduce the need for remediation in college.
- To overcome barriers related to postsecondary education institutions:
 - use computer assisted tools and contextual learning for remedial coursework; and
 - use peer tutors and implement an early warning system when students appear to be struggling.
- To overcome barriers related to workforce demand projections:
 - consider using job-vacancy rate data when making short-term workforce demand projections;
 - annually compile teacher shortage area data for at least the past five years and make teacher preparatory programs aware of this information;
 - expose many more high school and college teachers, counselors, and administrators to Connecticut DOL job demand information by changing to an electronic distribution of the report; and

Key Points

- ask high school guidance counselors, college admission officers, and college career counselors what information and in what format would be most helpful to students in making career decisions.
- To overcome barriers related to state agency organization, programs, and policies:
 - develop a master strategic plan that links together the roles of the separate constituent units and includes how the higher education system relates to the P-12 system and workforce needs of the state;
 - develop strategies in the plan, along with the four constituent units, to implement if colleges and universities fail to make progress on the specific accountability measures already being reported on;
 - in the future and within available appropriations, establish a pilot program within the Department of Higher Education to be used at the discretion of the commissioner, to reward colleges, universities, or systems that are meeting pre-established goals;
 - examine whether academic programs or career pathways need to be established in order to meet the workforce needs of competitive sector-based employers in Connecticut, based on information developed by the Office of Workforce Competitiveness; and
 - require the Connecticut Community College System to examine the feasibility of transferring the adult education programs currently offered by the technical high schools, including the licensed practical nurse program, to the community colleges.

Recommendations:

1. **Wherever possible, the U.S. Department of Labor taxonomy and EE/RE categorization should be incorporated into explanations of green collar jobs.**
2. **The Connecticut Community College System should implement uniform naming of green certificate programs across all member colleges.**
3. **The Connecticut Employment and Training Commission and the Connecticut Energy Sector Partnership should regularly solicit and make widely available information on green efforts occurring among the higher education institutions including new degree and certificate programs, stand-alone courses, and center/institute initiatives useful in the alignment of green collar jobs and employer needs.**
4. **Educational systems should develop agreements to share equipment needed for students training for green collar jobs, such as solar photovoltaic installation.**
5. **Connecticut postsecondary education institutions and state workforce development agencies should, wherever possible, support efforts to create career ladders and lattices in the green collar fields, particularly for those workers who gained entry into the system through temporary ARRA grant opportunities.**
6. **The Departments of Higher Education and Education should prepare an annual cross-system list of green courses, certificates and majors offered, and inventory of green-related equipment.**
7. **Staff from both the University of Connecticut Center for Clean Energy and the Institute for Sustainable Energy at Eastern Connecticut State University should meet at least quarterly to discuss possible ways to collaborate on green initiatives. Staff from other institutions and centers located within the same regions should also form partnerships and meet to develop collaborative efforts.**
8. **Connecticut should pass legislation reforming Connecticut high school graduation requirements as recommended by the State Department of Education in their proposed high school redesign.**

Key Points

9. All Connecticut high school juniors should be encouraged to take the Accuplacer or comparable test. Students may use their remaining time in high school to take additional preparatory coursework, utilize software programs such as KeyTrain, or a combination of these strategies to avoid remedial coursework in college.
10. Computer-assisted preparation programs such as KeyTrain should be promoted at all the community colleges. Results should be monitored for two years to determine whether use of the selected computer-assisted preparation program should be continued.
11. The Connecticut Community College System should consider replacing stand-alone remedial courses with introductory credit courses that integrate remedial skills instruction.
12. Connecticut colleges should implement no- or low-cost initiatives to improve graduation rates. Success or failure of efforts should be shared with all colleges on the DHE website.
13. The State Department of Labor should continue to pursue development and use of an electronic job vacancy methodology to provide current and near-future information on job demand in Connecticut.
14. The State Department of Education should annually compile and electronically distribute to all Connecticut public and independent colleges with teacher preparatory programs information for at least the past five years on teacher shortage areas.
15. The State Department of Labor should electronically mail the “Soaring to New Heights” report to all state high schools and colleges, returning to the earlier format that includes information on teacher occupations in demand.
16. The State Department of Labor should survey high school guidance counselors, college admission officers, and college career counselors to determine what information and in what format would be most helpful to students in making career decisions.

Key Points

17. C.G.S. Sec. 10a-11b establishing the Blue Ribbon Task Force and requiring the task force to develop a strategic master plan every five years shall be repealed and its responsibilities, along with its reporting requirements, be transferred to the Board of Governors for Higher Education.

C.G.S. Sec. 10a-6(a)(2) requiring the Board of Governors for Higher Education to develop a master plan shall be amended to include the word “strategic.”

The goals that the Board of Governors for Higher Education, the Blue Ribbon Task Force, and the Accountability Measures are required to promote, be blended into a single set of goals that the strategic master plan should address. The goals identified in C.G.S. Sec. 10a-6(b) for the accountability report shall be adopted and amended to include the goal of protecting academic freedom and maintain standards of quality ensuring a position of national leadership for state institutions of higher education.

On or before January 1, 2011, and every five years thereafter, the Board of Governors for Higher Education shall prepare a higher education strategic master plan for the state. The plan shall be prepared in consultation with the Higher Education Coordinating Council, which includes the commissioner of the Department of Education and the Secretary of the Office of Policy and Management, and the commissioners of the Departments of Labor, and Economic and Community Development, the director of the Office of Workforce Competitiveness, the chairpersons and ranking members of the Higher Education and Employment Advancement and the Commerce committees, and the chairperson of the board and president of the Connecticut Conference of Independent Colleges, and the president of the Connecticut Business and Industry Association, or their respective designees. The Board of Governors for Higher Education may consult with other entities as determined by the board.

The plan shall be submitted to the Governor and the Commerce, Education, Higher Education and Employment Advancement, and Labor Committees.

The board shall report biennially on progress made toward achieving the benchmarks in the strategic plan.

Key Points

18. C.G.S. Sec. 10-6b(g) shall be amended to require each constituent unit of the state system of higher education and the Board of Governors for Higher Education to submit strategies to improve performance and achieve results on unmet goals or performance measures as part of its annual accountability report to the commissioner, along with funding estimates for each proposed strategy. The commissioner of the Department of Higher Education shall include these strategies in its annual consolidated report to the Higher Education and Employment Advancement Committee. The commissioner shall also submit the report to the chairpersons and ranking members of the Commerce and Education Committees.

19. Beginning July 1, 2010, the Higher Education Coordinating Council shall review the accountability measures developed under C.G.S. 10-6(b)(g), and every five years thereafter, determine their continued validity, or need for revision. Any revisions or deletions shall be submitted to the Board of Governors for Higher Education for approval.

Upon BGHE approval, the commissioner of the Department of Higher Education, on behalf of the council, shall notify the committees of cognizance on any measures that were revised or deleted, with a brief explanatory statement.

The Achieving Results Higher Education Counts report should include a letter grade or other symbol that represents, at a glance, whether or not the goal is being achieved.

20. The Higher Education Coordinating Council should be reconstituted in accordance with C.G.S. Sec. 10a-6a.

21. Within available appropriations, a pilot program shall be established within the Department of Higher Education to be used at the discretion of the commissioner, to reward colleges, universities, or systems that are meeting pre-established goals.

22. The Office of Workforce Competitiveness, in consultation with the Connecticut Employment and Training Commission, the Departments of Higher Education, Education, Labor, and the Economic and Community Development, shall identify the sectors or sub-sectors in which career pathways need to be established, the workforce skills needed in those sectors, and the types of postsecondary programs that need to be developed to address the workforce needs in those sectors. The information shall be provided to the Board of Governors for Higher Education biennially.

Key Points

- 23. Using information developed by the Office of Workforce Competitiveness, the Higher Education Coordinating Council shall make recommendations to the Board of Governors for Higher Education regarding postsecondary certificates and/or degree programs needed to address any shortages, or if existing programs lack capacity to address shortage areas.**
- 24. The Connecticut Community College System, in consultation with the commissioners of the state Department of Education and the Department of Higher Education, and the superintendent of the Connecticut Technical High School system, shall examine the feasibility of transferring the adult education programs currently offered by the technical high schools, including the licensed practical nurse program, to the Connecticut Community College System.**

The Board of Trustees for the Connecticut Community College System shall report to the legislative committees of cognizance on the feasibility of such a transfer including the cost of such transfer, the number of employees that would be impacted, and if such a transfer occurred, the geographic locations where the programs could be offered by October 1, 2010.