

NWCET Best Practices

Title: Connecticut Career Choices State Initiative

Challenge:

In 2000 the state of Connecticut gave a mandate to its Office of Workforce Competitiveness (OWC) to develop a strategic plan for higher education designed to increase the supply of workers in information technology (IT) and electronic commerce. With the ending of federal support for School-to-Work programs, Connecticut needed a way to couple its IT workforce strategy with a new approach to the School-to-Work concept that would increase the effectiveness of both initiatives and better serve the economic and workforce needs for the state.

Solution:

Using a pilot project approach, the Connecticut Career Choices (CCC) was established as an array of programs designed to support students from middle school through colleges in understanding and gaining experience in technology related careers. The leaders of the CCC project made recommendations to address the following areas:

1. Industry-Accepted Skill Standards - The National Workforce Center for Emerging Technologies (NWCET) has developed skill standards for information technology that have been accepted by industry and that could be used in pilot programs in Connecticut. It was recommended that the project continue and expand pilot programs using the NWCET standards, having the state officially adopt the standards, and providing training through NWCET to organizations that need to implement standards and curriculum. A series of training conferences on skill standards for high schools, vocational-technical schools, community colleges, and Adult Education providers were also recommended. Finally, the creation of a separate career cluster for Information Technology by the State department of Education was strongly supported.

2. Extracurricular Activities and After-School Programs - A variety of after- and before-school programs and extended-day internships could offer opportunities to study the technology-related curriculum that is not available during the school day and were recommended to be included as part of the Connecticut Career Choices initiative.

3. Mentored Internships and Apprenticeships

Research on the School-to-Career experience nationwide has shown that internships and apprenticeships provide young people with in-depth exposure to the realities of the workplace, and help them to prepare for careers. Internships can be combined with mentoring to provide rich experiential learning opportunities.

4. Program Articulation

Transitions from one educational institution to another (e.g., from a community college to a four-year college) and from one level to another (e.g., from secondary school to college) need to be made smoother, in order to create more continuity in education and career preparation. The goal should be to create a seamless "K-16" model.

5. Technology Magnet Schools

Specialized magnet high schools and vocational-technical schools both offer opportunities to students to train and prepare for IT careers (those requiring further education and those that prepare students for immediate entry into the world of IT work). Employers should be included in program development.

6. Evaluation

An evaluative component should be built into whatever strategies are implemented using state funds to follow up on School-to-Career activities that were funded under the federal grant. As part of the evaluative component, criteria by which to measure program success need to be identified (including outcome measures), and data collection and management procedures will need to be put in place at the outset.

7. Intermediary Agencies

Nationwide, successful School-to-Career models usually have included some form of intermediary (whether an organization or an individual) that acts as a bridge between the education community and the business community. Through activities such as brokering, "translating" the language and culture of each community to the other, and helping to connect the two in a variety of ways, an active role for intermediaries should be included as part of the state's ongoing strategy.

The research for these recommendations and for the establishment of the Connecticut Career Choices was provided by Christine M. Casey, Ed.D. Please review the report from the Connecticut OWC published in February 2002 for additional project rationale and details.

Outcomes and Benefits:

The first Connecticut Summer Skill Standards Institute was conducted in June of 2002 to begin addressing recommendations #1, #4, and #5. The goals of the institute were as follows:

- To create capacity within the state for training and curriculum development using a "train-the-trainer" model
- To develop a community of educators trained in using the NWCET-developed skill standards for information technology
- To develop a resource through peers working on the same issues in different districts
- To understand the skill standards and their application in high school, vocational school, college and workplace settings
- To train educators to use the established standards-based curricula
- To train educators in developing new curricula and courses of studies using the IT skill standards
- To begin the process of gap analysis in each district and school to determine which courses exist and which are missing, and how they align to the standards and comprehensive sequences in technology
- To provide an opportunity for the leadership of this initiative to review goals and mission, and to begin the planning process jointly

The institute's four-day structure was designed to benefit from the opportunity of having a sustained period of training time, including evening meetings. In order to create a community that could communicate across districts throughout the state, it was necessary to first begin relationship building in person and then move to virtual interactions. Each district or program chosen for pilot curriculum development was required to bring the following team of representatives:

- A central office representative who supervised technology in all schools
- A building supervisor (Principal or Assistant, or Department Chair)
- At least two technology teachers
- At least one Community College representative
- A RESC (Regional Education Service Center) representative

Attendance and participation by industry professional was also an essential component of the desired success of the institute. More than 20 different representatives from Connecticut businesses directly participated in the agenda plus there was an evening reception sponsored by Silicon Sound which was attended by another 100 business people.

The elements of the agenda for the institute are listed below:

Themes for the Day One:

- Getting to know each other – beginning to build a team
- Industry Insights and Recommendations
- Understanding the NWCET Standards
- Overview of the Pilot Project and CCC

Themes for the Day Two:

- Continue building a team and finding out about each other's skills
- Examining a best practice example of a Introductory Course Curriculum based on the standards
- Modifying the course to make it useable in different settings
- Become more familiar with the Standards through using them within a real course context
- Trying out some sample activities
- Introduction to Scope and Sequence chart development beginning with Curriculum Mapping – applying industry insights from Day One about ideal skill sets as final products and deciding where to be taught

Themes for the Day Three:

- Using the talent and skills that participants brought to the experience
- Industry leaders working alongside trainers in developing curriculum
- Applying the NWCET clusters to specific areas
- Curriculum mapping and developing initial scope and sequence

Themes for the Day Four:

- Review of the CCC pilot and the Training Coaches role in the project
- Project out dates and potential activities
- Adaptation of Power Points to be used in the field during pilot
- Discussion of issues of turn key training
- Planning the communications network – on line, newsletters, list serves, virtual distance conferencing opportunities

Over 70 teachers and administrators from across Connecticut attended the first institute. From this group, five pilot sites were established – Branford, Danbury, Hartford, Waterbury, and the IT Learning Academy in Litchfield – which added to the first High Technology Academy that was already operating in Stamford.

Next Steps:

Additional institutes, using a shortened schedule, were scheduled and have been held throughout the state since the inception of the CCC. At least four more pilot sites have been added to the existing group in the summer of 2003.

The Connecticut Technology Council is currently working with CCC and the OWC in promoting a college-level intern program called "The Connecticut Science and Technology Connection." The goal of the program is to identify highly qualified undergraduates with the skills and knowledge to succeed, to support their further professional development and to match them in internships with leading Connecticut companies. This initiative addresses the second recommendation for higher education. Please see www.ct.org for additional program details.

Finally, the Connecticut Mentoring Partnership has been established at the original six pilot sites to promote mentoring and internships in technology careers that were recommended in the third proposal. Please see www.preventionworksct.org for an extensive explanation of the program and its supporting research.

Key Issue:

The establishment of the Connecticut Career Choices project provided a new, targeted approach to career development for students in Connecticut. It enabled the state to adopt the successful elements of the federal School-to-Work experience and apply them to technology-oriented pilot programs that have enriched the curricula and established educational pathways. Equally important, CCC has begun the successful implementation of the legislatively mandated information technology workforce strategy. These two broad initiatives have positioned Connecticut as a national leader in responding to the competitive challenges of the 21st century by beginning to develop its workforce, educating its young people, and offering them enhanced career opportunities – all in keeping with the increased skill requirement of the New Economy.

Partners:

Christine M. Casey, Ed.D., Consultant for the Governor's Prevention Partnership
Office of Workforce Competitiveness, State of Connecticut
Silicon Sound
University of New Haven
Connecticut Mentoring Partnership
Connecticut Technology Council
Connecticut Business and Industry Association
Michael Mino and the Education Connection (Regional Education Service Center located in Litchfield)