Awards for Innovation
Final Report

Title of Research Study:
Career and Technical Education: Educating the New Green Collar Workforce

Investigator, Institution:
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Strand Project Addressed
Northern Illinois University's School of Family, Consumer and Nutrition Sciences addressed the strand of curriculum development initiatives for CTE with the purpose of exposing secondary students to the green collar workforce.

Overview of Research Study
Career and technical education (CTE) programs are responsive to industry trends and economic needs. The Going Green initiative has created the demand for the newest high growth workforce sector. With development of new non-polluting products, technologies, and industries, a host of new jobs are being created. In 2006, more than eight million Americans worked in renewable energy and energy efficient industries by 2030 projection indicates that one-in-four Americans will be employed by these industries.

CTE prepares young people for jobs in vital growth sectors. As the demand for skilled workers in the green industry increases, CTE has the responsibility of exposing students to technical and employability skills needed to enter the green collar workforce.

The purpose of the grant was to develop a curriculum unit of instruction to expose students to the green collar workforce and that integrated academics, more specifically science, technology, engineering, and mathematics (STEM), within the lessons. The curriculum was researched, developed, and implemented by an interdisciplinary collaboration of CTE and academic teachers. The curriculum was designed for career education classes (Consumer Education, Resource Management, etc) that enroll all students.

CTE: Preparing the New Green Collar Workforce curriculum provides CTE teachers with instructional methods and materials to include into their overall career development course curricula. Educating students on the relevant workforce needs, such as green jobs, has the potential for students to pursue careers in this sector and provide employers with a pipeline of skilled individuals for the workforce demands of the 21st century. Creating student awareness of green collar careers can inspire the improvement of conditions for society as well as their own quality of life. CTE is committed to a continued education and partnership effort to improve and empower students for a greener life as Consumers, through the Community, and in Careers.

Objectives/Research Questions

a. Develop a context based unit of instruction containing five lesson plans related to the purpose, and that integrates science, technology, engineering, and mathematics (STEM)

A curriculum unit titled: CTE: Preparing the New Green Collar Workforce was developed for secondary career education courses (eg. Consumer Education, Resource Management, Cooperative Education, etc). The purpose of the curriculum is to expose secondary students to the green collar workforce and the academic integration of science, technology, engineering, and mathematics (STEM). The curriculum unit contains six lesson plans with supporting materials; is aligned with the Illinois Learning Standards; details student outcomes; and identifies teacher and student resources. The six lesson topics are:

1. Introduction to Green
2. Green Discovery Learning
3. STEM Connection in Green Careers
4 Green Career Opportunities
5. Green Career Pathways
6. Green Skills and Green Education

b. Provide cross-disciplinary collaboration of 2 career and technical education teachers (Family and Consumer Sciences and Business Education) and a Science Education teacher to assist in the design and development curricular materials that includes teacher content materials and instructional strategies

The curriculum unit was developed through an interdisciplinary approach by Patti Kozlowski, a Family and Consumer Education teacher, Peggy Peach, a Business Education teacher, both faculty members at West Chicago High School, Erika Varela, a Science teacher at Palatine High School, and Nancy Scheitler, a retired technology director from Glenbard North High School.

c. Develop an instrument to measure knowledge of the green collar workforce
d. Implement the unit of instruction in an Illinois Public High School Resource Management course by a CTE teacher
e. Assess curriculum effectiveness by:
    a. Comparing pretest and posttest results

An instrument was developed by the project director to measure the effectiveness of the curriculum unit. The curriculum unit was implemented in one Consumer Education class at West Chicago high School and three Resource Management classes at Palatine High School. Prior to the curriculum unit implementation, the instrument was given as a pretest, then after implementation, the instrument was given as a posttest. The results indicated that the developed curriculum increased the knowledge of the green collar workforce among the participating secondary students.

Project Deliverables

- Curriculum CDs distributed at the 2009 Connections Conference and will be distributed at the 2009 IACTE/IFACSTA Conference (June 16) and at the ACTE Conference (November).
- Two presentations were given at the 2009 Connections Conference in Springfield. Both presentations were standing-room only.
- A manuscript titled: Career and Technical Education: Preparing the New Green Collar Workforce was submitted to the Journal of Consumer Education.

Additional project outcomes:

- Accepted presentation at IACTE/IFACSTA June 16, Tinley Park, IL
- Accepted presentation at ACTE, November, Nashville, TN
- West Chicago's local paper is preparing an article spotlighting the curriculum and showcasing student projects
- Techniques article (ACTE)- September issue, CTE & the Economy