Industrial Technology and Agricultural Education: A Realized Synergy

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Introduction

For approximately a decade, the separate units of industrial technology education and agricultural education, within the University of Nebraska-Lincoln, have been negotiating the creation of a combined endorsement. This dialogue was prompted by research completed in the spring of 2000 revealing 58 % of all Nebraska secondary school principals reported a definite interest for teachers possessing such an endorsement. Personnel management information collected revealed that only 52 and 54 percent of agricultural education and industrial technology instructors, respectively, were 100 % assigned to either subject area, suggesting that an instructor possessing both endorsements could contribute to more efficient personnel budgeting, especially in smaller rural schools.

Even though a combined endorsement has not yet been achieved, this discussion has led to, in the summer of 2008, the move of the industrial technology program from the College of Education and Human Sciences (CEHS) into the College of Agricultural Sciences and Natural Resources (CASNR), specifically assigned within the Department of Agricultural Leadership, Education and Communication (ALEC).

Program phases/steps

The synergy between the two units actually began during the endorsement dialogue in 2002 when industrial technology undergraduates began enrolling in ALEC 308, Laboratory Management, and other selected mechanized systems management courses within CASNR. In spring 2008, the ALEC courses of teaching methods and practicum, program planning and professional seminar were added to the industrial technology preparation program.

Beyond the teacher endorsement path of industrial technology, a second option has been developed in industrial technology leadership. This option integrates in-place ALEC leadership course work with technical industrial technology course work in an effort to expedite the leadership development and capabilities of non-teaching graduates entering the manufacturing and construction industry.

Results to date and implications

An obvious result has been a more effective use of faculty time and facilities. Rather than two faculty teaching classes of 8 and 6, and duplicating content, a singular content offering is offered by one faculty member to 14 students within a single facility, and the teaching unit's justification within the college and university is strengthened.

This co-enrollment program has created mutually beneficial outcomes. Through the demonstration oriented nature of the laboratory management course, agricultural education majors are exposed to a greater breadth of industrial technology laboratory machines, techniques and procedures, thus broadening their abilities to deliver agricultural mechanics instruction.

The blending of both majors in methods and program planning has provided a better vantage of diversity in program approach to the delivery of career education. Both programs contain cognitive, experiential (supervised agricultural experience and professional development

plan), and leadership learning (SkillsUSA and FFA); however, variations of emphasis within learning domains (i.e. cognitive, psychomotor, affective) and senses (i.e. visual, auditory, kinesthetic) between agricultural education and industrial technology provide interesting contrasts for lesson planning, development of program delivery models, and assessment strategies.

A closer vantage of another career education discipline has provided a platform for reflective program analysis. For example, the emphasis on active learning and demonstration within the industrial technology discipline has provoked serious reflective assessment on the degree to which agricultural education has become cognitively oriented. Equally as obvious was an industrial technology orientation toward instruction by example (teachable moment) with less emphasis on preliminary cognitive discussion and programmed repetition.

Another long term benefit is the establishment of professional relations with a greater diversity of career education instructors. An example being the exchange of practitioner directed inservice instruction. Recently, a computer assisted design workshop was conducted by a secondary industrial technology instructor for agricultural education instructors. This would not have occurred without the synergy of the ALEC agricultural education/industrial technology education program.

Future plans

(1) Development of a course to specifically address SkillsUSA and Professional Development Plan (PDP) for industrial technology majors, (2) Program planning/methods practicum experience for industrial technology majors, (3) Laboratory skills practicum for agricultural and industrial technology education majors, (4) Continued synergy between agricultural and industrial technology education practitioners for inservice education purposes, (5) Development of an introductory ALEC course specifically for industrial technology and agricultural education majors, and (6) Development of a “dual endorsement” plan available for industrial technology and agricultural education majors.

Bibliography

Bell, L.C. (2000). Assessing the current supply and demand environment for secondary instructors of agricultural education and/or industrial technology education in Nebraska secondary schools. Unpublished manuscript, University of Nebraska-Lincoln.