OHIO AGRICULTURAL EDUCATION TEACHERS' ATTITUDES TOWARD NATIONAL SKILL STANDARDS

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Abstract

Currently, there is a movement in the U.S. for business and industry to voluntarily develop national skill standard systems for their occupations. Once these systems are developed they will be used to develop training programs and certify workers' competence. To success-fully implement any new system or program, it is vital to know the attitudes of the people that will be involved in the implementation process toward skill standards. After the attitudes of these key people are known, strategies for implementing such systems can be developed This study was conducted to determine secondary agricultural teachers " attitudes toward national skill standards. **The** *population consisted of all agricultural teachers in secondary schools in Ohio. It was found that agricultural teachers agreed that they would or had used skill standards. However, they currently lack information about these skill standards.*

Several individuals have promoted national skill standards that would identify the knowledge and abilities a worker should possess to successfully gain and maintain employment (Hudelson, 1993; Hudson, 1994; Hoachlander and Rahn, 1994). Skill standards are currently being developed for twenty-two occupational areas (Hull, 1994) and are to be nationally recognized and portable from state to state. Examples of occupational areas related to agricultural education include: biotechnology, automotive, electrical, and welding. Workers that successfully demonstrate these skills are certified as having met these preset standards.

Proponents have stated that national skill standards would improve the U.S. workforce and product quality, provide better education, and increase accountability among schools (Hudelson, 1993, Hoachlander and Rahn, 1994). In addition, Hoachlander and Rahn listed the following as potential benefits of a skill standard system: (a) greater work mobility and portability of credentials; (b) higher pay; (c) greater job certainty and more job opportunities for workers; (d) more efficient recruitment, screening, and placement of employees by employers; (e) clearer goals and educational pathways for students; (f) more consistent, focused instruction, and curriculum; (g) greater accountability for schools, programs, teachers and students; (h) increased quality of products and services; and (i) higher consumer confidence and satisfaction (p. 20). Hudelson (1993) suggested that national skill standards offer accountability for workers by recognizing the individual as being certified or an accomplished craftsperson. Employers can use skill standards to indicate the level of workers' occupational competence. Skill standards also help teachers define the knowledge and skills that industry expects of vocational education program graduates. Finally, skill standards provide a fair means for administrators to use in evaluating vocational education programs.

Theoretical Framework

Once skill standards are developed, they will need to be properly implemented if they are to be effective in developing training programs and

certifying workers' competence. Fishbein and Ajzen (1975) stated that it is important to know the attitudes of the individuals that will be implementing the program. In addition, Fishbein and Ajzen indicated that an individual's attitude is a major determinant in a person's performance of the behaviors in question, which in this case is the use of skill standards.

Problem Statement

Performance measures and standards have the potential for impacting what is taught, how it is taught, and how it is evaluated. However, agricultural teachers need to possess positive attitudes toward skill standards if they are to impact their use in planning and modifying their programs. Information about agricultural teachers' attitude toward skill standards is not available.

Purpose and Objectives

The purpose of this study was to determine secondary Ohio agricultural teachers' attitudes toward national skill standards. The specific objectives were to:

1. Measure attitudes of secondary Ohio agricultural teachers toward national skill standards.

2. Describe the respondents in terms of their demographic characteristics.

Methodology

Type of Research

This was a descriptive research study . The research was designed to assess the attitudes of Ohio agricultural teachers regarding national skill standards.

Population and Sample

The population for this study was all secondary agricultural teachers within the State of Ohio (N = 485). A mailing list of these teachers for the 1994-95 academic year was obtained from the Ohio Department of Education. Duplicate names were purged from the list to control for selection error. For this population, a random sample of 215 was drawn (Krejcie and Morgan, 1970).

Instrumentation

A two-section instrument was developed by the researchers. Section I of the instrument included sixty-two items designed to determine the attitudes of agricultural teachers using a five-point Likert-type scale (1 = strongly disagree, 2 = disagree, 3 = undecided, 4 = agree, and 5 = strongly agree). Three types of attitudes--affective, cognitive, and behavioral--identified by Pettyjohn, Banikart, Fitzgerald, Misovich, Spiegler and Triplet (1986) guided the development of items included in this instrument. Section II of the instrument included background and situational information.

Section I of the initial instrument consisted of 95 items which were assembled from the review of literature. A panel of nine agricultural education and comprehensive vocational education graduate students examined the instrument for content and face validity. Items were changed according to the suggestions provided by the panel. To establish reliability, a modified instrument was sent to a sample of twenty-eight vocational teachers randomly selected from the population of all vocational teachers in the state and who were not included in the study. Section I of the instrument was reduced to 62 statements and the resulting Cronbach's alpha coefficient for internal consistency was .87. A test-retest was also calculated to determine consistency over time. The percent of agreement of the test-retest for section I was 82%.

Data Collection

The instrument designed for this study was mailed to the sample of Ohio secondary agricultural teachers selected to participate in this study. The first mailing consisted of the instrument, cover letter, and self-addressed, stamped envelope. Non-respondents were sent a reminder postcard two weeks after the first mailing. A second mailing was sent out at the end of the third week that contained a reminder letter, copy of the original cover letter, instrument, and a self-addressed, stamped envelope. At the end of the sixth week, 61% (132) of the instruments were returned. Ninety-two percent (121) of the 132 surveys returned were usable. To control for non-response error, a 10 % random sample of non-respondents was contacted as recommended by Miller and Smith (1983). These non-respondents were contacted by telephone and asked for their responses regarding 15 randomly selected items from the instrument. The mean score of respondents and non-respondents attitudes toward skill standards were compared using a f test. No significant differences were found between the respondents and non-respondents. In addition, respondents and non-respondents were compared on the mean score of selected demographic characteristics (age, years of teaching, years of work experience) using a t test. No significant difference were found between the two groups on these characteristics. Since these two groups were not statistically different, the results were generalized to all Ohio secondary agricultural teachers.

Data Analysis

Descriptive statistics were used to report the frequencies and percentages of responses of agricultural teachers' attitude toward skill standards. Negative items were reversed for the analysis. A total summated attitudinal score was computed in order to determine the overall mean and standard deviation.

Findings

Attitudes of Teachers

Table 1 presents the agricultural teachers' modal attitude toward skill standards. None of the items had a modal response of strongly agree (5). Forty-four statements had a modal response of agree (4). In this discussion, only items with modes that included sixty percent or more of the responses will be discussed. Respondents agreed with item 23--they use employability skills as a means for assessment of students' abilities in the vocational area that they teach (70%); item 39--multiple levels of mastery should be characteristic of a national skill standard system (65%); item 55--they use Ohio Competency Analysis Profiles standards to develop curriculum in their vocational program (65%); and item 12-national skill standards provide a bench mark for comparing skill levels (63%). Additionally, respondents agreed with item 15--they use Ohio Competency Analysis Profiles standards to develop assessment techniques in their vocational program (61%); item 36--national skill standards should help to identify competent individuals for employment (61%); and item 38--a national skill standard system should be able to meet the changes in technology (60%);

Sixteen of the items received a modal response of undecided (3). Once again, only the items with modal responses that exceeded sixty percent will be discussed. Agricultural teachers were undecided about item 20--other countries have successfully used national skill standards systems (90%); item 43--other countries have successfully developed national skill standard systems (87%); and item 60-national skill standards are not too rigid (65%).

Only two items had a modal response of disagree (2). Respondents disagreed with item 1 O--a national skill standard system would purge vocational education of its mediocre teachers (38%) and item 22--they were familiar with the national

Table 1. Secondary Agricultural Teachers' Attitudes Toward Skill Standards (n = 12 1)

Item number		Mode	f	%	Range
1.	Students that have met the entry level skill standards will have a smoother transition from school to work than those who do not.	4	68	56	2-5
2.	I believe that national skill standards enhance vocational education programs.	4	52	43	1-5
3.	I have added standards to Ohio Competency Analysis Profiles based upon recommendations of business and industry.	4	70	58	l-5
4.	Vocational programs that use national skill standards are more effective than those who do not use skill standards.	3	47	39	l-5
5.	National skill standards are too specific."	3	63	52	l-5
6.	National skill standards will demand more accountability of vocational education programs than what is presently required.	4	57	47	l-5
7.	National skill standards will improve occupational training.	4	54	45	l-5
8.	The federal government should support the development of a national skill standard system.	4	41	34	1-5
9.	National skill standards should decrease the time required by employers to screen employees.	4	52	43	l-5
10.	A national skill standard system would purge vocational education of its mediocre teachers.	2	46	38	l-5
11.	National skill standards would require vocational education to be market driven.	4	53	44	l-5
12.	National skill standards provide a bench mark for comparing skill levels.	4	76	63	1-5
13.	National skill standards should encourage students to take more ownership of their skill development.	4	70	58	l-5
14.	Skill standards will help improve the vocational program that I teach.	4	50	41	l-5
15.	I use Ohio Competency Analysis Profiles standards to develop assessment techniques in my vocational program.	4	74	61	l-5
16.	Skill standards will make vocational education programs more accountable.	4	64	53	l-5
17.	National skill standards will establish an unfair method of assessing students' abilities."	3	48	40	l-5
18.	National skill standards should not be an integral part of vocational education programs.[a]	4	50	41	l-5
19.	National skill standards should have a positive effect on the productivity of the American work force.	4	65	54	1-5

(Table continued)

Table 1. (continued)

Item number	Mode	f	%	Range
20. Other countries have successfully used national skill standard systems.	3	109	90	l-4
21. Skill standards provide the basis for measuring an individual's ability.	4	70	58	l-5
22. I am not at all familiar with the national skill standards for my vocational program.[a]	2	42	35	l-5
23. I use employability skills as a means for assessment of students' abilities in the vocational area that I teach.	4	85	70	2-5
24. Knowledge of subject area is not adequately assessed by skill standards."	3	47	39	l-5
25. National skill standards will lower employer recruiting costs.	3	50	41	l-5
26. Vocational educator's technical competence will need to be upgraded in order to meet industry skill standards.	4	59	49	l-5
27. National skill standards would force closer alliances between education and business/industry.	4	64	53	l-5
28. National skill standards should have a positive effect on vocational programs.	4	65	54	l-5
29. Skill standards should be used by business and industry to determine who should be promoted.	3	45	37	l-5
30. A vocational education program that uses national skill standards will have a better reputation than those which do not use national skill standards.	3	56	46	l-5
31. With a national skill standard system in place, industry would demand better qualified students from vocational programs.	4	55	46	l-5
32. I currently use the Ohio Competency Analysis Profiles standards developed by the state in the vocational program that I teach.	4	71	59	l-5
33. A national skill standard system will be detrimental to vocational education.[a]	4	52	43	l-5
34. The skill standards I currently use in my vocational program do not match with those in business and industry."	4	62	51	l-5
35. I would adhere to an industry based skill standard system for my vocational program.	4	116	57	l-5
36. National skill standards should help identify competent individuals for employment.	4	74	61	l-5
37. A national skill standard system will be a worth while investment.	4	53	44	l-5
38. **A** national skill standard system should be able to meet the changes in technology.	4	73	60	l-5

(Table continued)

Table 1. (continued)

Item number		Mode	f	%	Range
39.	Multiple levels of mastery should be a characteristic of a national skill standard system.	***4***	***78***	***65***	l-5
40.	I have not received assistance from the State Department of Education in implementing Ohio Competency Analysis Profiles."	***4***	***62***	***51***	1-5
41.	I would not use national skill standards developed by business and industry in my vocational program.a	***4***	***61***	***50***	l-5
42.	National skill standards should increase the competitiveness of America in the global market place.	***4***	***60***	***50***	l-5
43.	Other countries have successfully developed national skill standard systems.	***3***	***105***	***87***	l-4
44.	National skill standards should improve the quality of America's goods.	***3***	***55***	***46***	1-5
45.	National skill standards need to be very specific.	***3***	***51***	***42***	l-5
46.	Students who have met the skill standards for their occupation should receive higher wages than those who do not.	***4***	***60***	***50***	l-5
47.	National skill standards provide a basis for educational goals.	***4***	***70***	***58***	l-5
48.	I am familiar with skill standards that have been set in the vocational area that I teach.	***4***	***61***	***50***	l-5
49.	Students from vocational programs with industry certification have higher level skills than students from vocational programs without such certification.	***3***	***61***	***50***	l-5
50.	Business and industry should play the most important part in the development of national skill standards.	***4***	***58***	***48***	l-5
51.	National skill standards will lower employer training cost.	***3***	***53***	***44***	l-4
52.	National skill standards will help to sort out students that are not serious about their vocational program.	***4***	***56***	***46***	l-5
53.	I have a strong understanding of skill standards within the vocational area that I teach.	***4***	***53***	***44***	1-5
54.	National skill standards will help students to focus on their preparation for work.	***4***	***68***	***56***	l-4
55.	I use Ohio Competency Analysis Profiles standards to develop curriculum in my vocational program.	***4***	***78***	***65***	l-5
56.	Development of a national skill standard system should be the responsibility of business and industry.	***3***	***48***	***40***	l-5
57.	**A** national skill standard system would not have any effect on how America will educate its children."	***4***	***58***	***48***	l-5
58.	I currently use portfolios as a means of assessment of students' abilities.	***4***	***50***	***41***	l-5

(Table continued)

Table 1. (continued)

Item number	Mode	f	%	Range
59. I would not use skill standards as a means for assessment of students within the vocational area that I teach."	4	63	52	l-5
60. National skill standards are too rigid."	3	78	65	l-4
6 1. National skill standards should not be portable across the nation.[a]	3	51	42	l-5
62. Students that complete a high school vocational program should be able to meet entry level job requirements.	4	73	60	l-5
Agricultural teachers' summated attitude score	3.38(M)		.439(SD)	

Note. Rating scale was l=Strongly disagree, 2=Disagree, 3=Undecided, 4=Agree, 5=Strongly agree. Scores of negative items were reversed
'Denotes negatively stated items.

skill standards for their vocational program (35%). The summated score for the attitude of the agricultural teachers toward skill standards had an overall mean of 3.3 8 with a standard deviation of .439.

Resnondent Characteristics

Demographic information about the respondents (Table 2) indicated that the majority were male (88%). Ninety-three percent of these teachers reported that agriculture was their primary teaching area. Three (3%) respondents indicated that they had a split appointment between agriculture and trade and industrial education and considered trade and industrial education as their primary teaching area. Of the respondents, 42% had completed a master's degree, and 35% had received a bachelor's degree. Agricultural teachers with an associate's degree or less represented slightly less than one-fifth (19%) of the teachers. More than one-half (59%) of the respondents taught at a comprehensive high school. Initial certification was obtained as the result of having a bachelor's degree for 64% of the respondents. More than three-fourths of the respondents (84%) indicated that they were technically certified.

The ages of the respondents ranged from 23 to 65. The mean age of these agriculture teachers was 41.97 (SD = 10.15). The agricultural teachers indicated an average of 13.73 (SD = 9.94) years of work experience prior to or concurrent with teaching. Years of work experience ranged from zero to 50. The average number of years taught by these teachers was 14.92 (SD = 8.77) with a range from one to 36 years.

Implications and Recommendations

Ohio agricultural teachers indicated that they have used standards (Ohio Competency Analysis Profiles) developed by the state. These standards were used specifically for the purposes of developing student assessment techniques and curriculum. In addition, they assessed the employability skills as a means of their students. This indicated that agricultural teachers are currently using different forms of standards available to them as student assessment tools. The results of this study also indicated that agricultural

Table 2. Categorical Demographic Information (n = 12 1)

Variable of Interest	Frequency	Percentage
Gender:		
Male	107	88.4
Female	8	6.6
Non-response	9	5.0
Total	121	100.0
Primary Vocational Teaching Area:		
Agriculture	112	92.6
Trade and Industrial	3	2.5
Non-response	6	4.9
Total	121	100.0
Highest Educational Level:		
High School Diploma	17	14.0
Associate Degree	6	5.0
Bachelor's Degree	42	35.0
Master's Degree	51	42.0
Non-response	5	4.0
Total	121	100.0
Type of High School:		
Comprehensive	71	58.7
Joint Vocational School	42	34.7
Non-response	8	6.6
Total	121	100.0
Initial Teaching Certification:		
Alternative Certification	32	26.4
Bachelor's Degree	77	63.6
Master's Degree	6	5.0
Non-response	6	5.0
Total	121	100.0
Technically Certified:		
Yes	101	83.5
No	13	10.7
Non-response	7	5.8
Total	121	100.0

teachers may not realize other skill standards that have been developed and could be used in their agricultural programs.

This study provided evidence for the need to further educate secondary agricultural teachers about national skill standards. If these standards are to be used, agriculture teachers must first understand and support national skill standards. Some different ways attitudes may be increased are by having agricultural teachers participation in educational programs sponsored by professional organizations (e.g., National FFA Foundation, American Welding Society, National Automotive Technical Education Foundation) related to courses taught in agricultural programs. In addition,

teachers should participate in state and national vocational education association meetings where these topics are addressed.

This study should be used to help enhance preservice agricultural education programs by including information about the potential use of national skill standards in agricultural programs. Teachers need information about how these standards could be used in planning, improving, and evaluating their programs. Additionally, agricultural teacher educators can use this information to develop and implement inservice programs designed to increase agriculture teachers' attitudes toward national skill standards.

Further studies should be conducted to monitor agricultural teachers' awareness of national skill standards. Studies should also be conducted to measure the use of national skill standards by agriculture teachers.

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