

Manager/Supervisor Perceptions of the Educational Needs of Urban Agribusiness Employees

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In order to adequately plan and deliver effective adult education programs for persons interested in agriculture, it is necessary to determine the need for such programs. Information about programs of vocational agriculture designed to meet the needs of agribusiness employees was not readily available. If vocational agriculture programs are to provide adult education for agribusiness, it is important to determine if a need exists. Therefore, the purpose of this study was to assess the perceptions of urban agribusiness managers/supervisors regarding the need for education or training for employees they supervise. The research objectives used to guide this study were:

1. To assess the educational/training needs of agribusiness employees as perceived by management/supervisory personnel in four sectors of the agricultural industry.
2. To ascertain if differences exist in the educational/training needs of agribusiness employees as perceived by three levels of management /supervisory personnel.
3. To ascertain if differences exist in the need for education/training of employees as perceived by management/supervisory personnel among four types of agribusinesses.

Theoretical Framework

Adult education programs in agriculture historically concentrated on providing assistance to persons engaged in production agriculture. During the early 19th century, county fairs provided the greatest opportunity to exchange new ideas and technology related to farming. As a result of social and economic changes, the United States government enacted legislation which created land grant universities (Morrill Act, 1862), experiment stations (Batch Act, 1887), the cooperative extension service (Smith-Lever Act, 1914), and vocational agriculture programs (Smith-Hughes Act, 1917). The goal of such legislation was to aid in developing and disseminating new technology which would enable farmers to become more efficient producers of agricultural products.

Since the turn of the century, the number of farmers has declined to about 3% of the United States workforce, while the number of persons employed in other sectors of the agricultural industry has increased to approximately 22% (AgFocus, 1986). Adult education offerings through programs of agriculture in public schools have not reflected this shift in agricultural employment.

In November, 1985, the Missouri Department of Elementary and Secondary Education sponsored a conference titled "Shaping the Future of Agricultural Education". Over 200 educators, politicians, farmers, and agribusiness persons convened to discuss the future of agricultural education.

Recommendations resulting from the conference suggested that:

1. Agricultural education should be a program for all students from kindergarten to adult.
2. The present strengths of agricultural education programs should be maintained, but should be broadened to meet the future needs of students and the agricultural industry.
3. The scope of adult education in agriculture should be broadened to include full- and part-time farmers, small farmoperators, specialityvtron and livestock producers, retired and displaced farmers, persons with avocational interests, and persons employed in agriculture outside of production (Missouri Department of Elementary and Secondary Education, 1986).

A report published by the Missouri State Council on Vocational Education (1986-87) indicated it was important for persons responsible for policy development, program planning, and implementation to obtain input from the private sector.

Reeds assessment studies in agricultural. education have been conducted; however, needs assessment research in the area of agribusiness was limited. Anderson (1982) surveyed agribusiness employers and employees in two Ohio counties for the purpose of developing a paradigm to determine the perceived educational needs of agribusiness employees. Anderson found the majority of agribusiness employers and employees expressed a need for additional education, yet, had never participated in adult education or been asked about their educational needs. Employers revealed that the best delivery system for professional employees was colleges or universities. It was reported that employers could fulfill the educational /training needs of skilled employees and that high schools were the most appropriate delivery system for unskilled employees. The researchers indicated that additional research should be conducted with larger agribusinesses to determine the relationship of the high perception of educational need with size of business.

In another study completed in Ohio, Holton (1986) surveyed agribusiness employees to determine the status of adult education offerings in agriculture by the Ohio Cooperative Extension Service, public institutions (high schools, technical institutes, The Ohio State University) and agencies related to agribusinesses. Findings from the study revealed that agribusiness employers had participated in adult education programs offered by the Ohio Cooperative Extension Service; product line companies were the most important agency which should provide educational services to agribusiness employers and employees: and, agribusiness employees received additional training on-the-job and through specialized schools.

Procedures

The population consisted of all agribusinesses which were members of the Food and Agriculture Division of the Greater Kansas City Area Chamber of Commerce. Each of the member agribusinesses were classified into sectors outlined by Shelhamer, Bishop, and Douglas (1984). One agribusiness was randomly selected to represent: (a) the agricultural supplies and services sector; (b) the agricultural mechanics sector; (c) the agricultural products sector; and, (d) the horticulture sector.

a survey instrument was developed utilizing previous research and a Likert-type, agree/disagree response scale. The instrument was examined by a panel of experts to verify its content validity. A pilot test of the instrument and data collection procedures was also completed. The reliability of the instrument was estimated by calculating a Cronbach's alpha coefficient (.91).

Data collection instruments were hand-delivered to a contact person identified at each selected agribusiness location. The contact person delivered and collected the questionnaires from top managers, middle managers, and supervisors in each business (Beach, 1980). Manager/supervisor perceptions were believed to be the most indicative of future educational/training needs. Instruments were collected from each contact person after one follow-up was made.

A check for non-response bias was conducted by comparing the responses of early and late respondents as described by Barrick, Miller, Van Tilburg, and Warmbrod (1985). No significant differences in the responses to the dependent variables were identified; therefore, the data collected were considered to be representative of the sample.

The data were summarized and analyzed using both descriptive and inferential statistical techniques. The following null hypotheses (tested at the .05 alpha level) were formulated to address objectives two and three, respectively:

H₀₁: There is no significant difference in the need for education/training of employees as perceived among the three levels of management/supervisory personnel.

H₀₂: There is no significant difference in the need for education/training of employees as perceived by management/supervisory personnel among the four agribusinesses.

Findings

Sixty-five of a possible 72 managers/supervisors responded to the questionnaire for an overall response rate of 90%. The number of management/supervisory personnel in each business ranged from 10 in the horticulture sector to 26 in the agricultural supplies and services sector. The number of employees at each business site ranged from 43 in the agricultural products sector to 135 in the agricultural supplies and services sector. Eleven females and 54 males were in management/supervisory positions. The educational level of the managers/supervisors included 2 with a high school diploma, 19 with some college but no degrees, 4 with two-year degrees, 20 with four-year degrees, 11 with some graduate work, 6 with masters degrees, and 3 individuals with doctoral degrees. A majority (44 of 65) had not been involved in any vocational education program.

The number of individuals in each management level included 15 top managers, 34 middle managers, and 16 supervisors. There were no females employed as top managers, 5 females employed as middle managers, and 6 females employed as supervisors. The number of employees supervised by top management personnel ranged from 8 with responsibility for 5 or less employees to 4 with responsibility for 16 or more employees. Middle managers ranged from 20 with responsibility for 5 or less employees to 5 with responsibility for 16 or more employees. Supervisors ranged from

13 with responsibility for 5 or less employees to none with responsibility for more than 15 employees.

The first research question was developed to assess the educational /training needs of agribusiness employees as perceived by management /supervisory personnel in four sectors of the agricultural industry. Means and standard deviations were computed for the factors included in the questionnaire and are reported in Table I. Mean scores ranged from a high of 3.15 for the item, Jobs performed by employees as becoming more complex, to 2.49 for the item, Greater knowledge of the role our business plays in agricultural industry would improve the job performance of employees I supervise. Managers/supervisors were in general agreement on the factors relating to the need for education/training as indicated by mean scores above the midpoint (2.5) of the scale for 10 of the 11 items.

Table 1
Order of Factors Related to the Need for Education/Training of Agribusiness Employers

Rank	Factor	\bar{X}^a (N = 65)	SD
1	Jobs are becoming more complex	3.15	0.75
2T	Increases the likelihood of job advancement	2.89	0.56
2T	Results in greater job security	2.89	0.61
4	Encouraged to participate by manager/supervisor	2.86	0.81
5T	Additional career counseling needed	2.85	0.51
5T	Greater knowledge of tech.	2.85	0.61
7	Ed./train. should be offered at workplace	2.81	0.63
8	Part. in ed./train. should be rewarded with salary increases	2.71	0.58
9	Additional technical agric. knowledge needed	2.65	0.74
10	Greater knowledge of the agricultural industry	2.62	0.72
11	Greater knowledge of the role of the business	2.49	0.59

^a Responses were coded: 1 = strongly disagree; 2 = disagree; 3 = agree; 4 = strongly agree.

Means and standard deviations were also computed for items included in the questionnaire which asked for responses from management/supervisory personnel concerning educational/training topics needed by employees. Table 2 lists the topics which produced mean scores above 3.0 and below 2.0 on the four-point response scale. Twenty-two of the 43 topics produced means above the scale midpoint. Managers/supervisors indicated the strongest agreement with the need for education/training for employees they supervise in the areas of human relations/employee leadership, employee motivation, and decision making. Managers/supervisors indicated the least need for education/training for employees they supervise in the technical areas of crop production and integrated pest management.

The first hypothesis was developed to ascertain if significant differences existed in the educational/training needs of agribusiness employees as perceived by three levels of management/supervisory personnel. The results of the analysis of variance procedure, as reported in Table 3, did not reveal any significant differences in the perceived need for education

Table 2

Manager/Supervisor Perceptions of the Educational/Training Topic Needs of Agribusiness Employees Above 3.0 and Below 2.0

Rank	Topic	\bar{x}^a (N = 65)	SD
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Above 3.0			
1	Human relations	3.41	0.61
2	Employee leadership	3.18	0.58
3	Employee motivation	3.12	0.70
4	Decision making	3.11	0.47
Below 2.0			
42	Integrated pest management	1.93	0.66
43	Crop production	1.86	0.56

^d Responses were coded: 1 = strongly disagree; 4 = strongly agree.

Table 3

Comparison of Management/Supervisor Perceptions of Factors Related to Educational/Training Needs of Agribusiness Employees

Factor	Management level ^a			F	p
	T _b X _b SD (N = 15)	M X SD (N = 34)	S X SD (N = 16)		
Jobs are becoming more complex	3.26 0.74	3.21 0.50	2.94 0.47	0.90	.411
Increases the likelihood of job advancement	2.93 0.68	2.94 0.30	2.75 0.56	0.67	.514
Part. results in greater job security	3.06 0.42	2.85 0.72	2.81 0.55	0.80	.454
Encouraged to part. by manager/supervisor	2.93 0.53	2.91 0.80	2.68 0.50	0.49	.616
Additional career counseling needed	2.73 0.65	2.88 0.48	2.88 0.32	0.48	.623
Greater knowledge of tech. advances	3.00 0.44	2.85 0.40	2.68 0.32	0.99	.376
Education/training should be offered at the workplace	2.60 0.72	2.85 0.38	2.94 0.35	1.23	.300
Part. should be rewarded with salary increases	2.66 0.42	2.67 0.71	2.81 0.32	0.34	.712
Additional tech. agric. knowledge needed	2.66 0.42	2.68 0.52	2.65 0.47	0.13	.895
Greater knowledge of agric. industry	2.66 0.80	2.65 0.44	2.50 0.61	0.27	.766
Greater knowledge of the role of the business	2.53 0.59	2.47 0.46	2.50 0.47	0.06	.943

^d Management levels are: T = top management; M = middle management; S = supervisor.

Responses were coded: 1 = strongly disagree; 4 = strongly agree.

/training of employees among the three levels of management/supervisory personnel. The hypothesis was not rejected.

The second hypothesis was developed to ascertain if significant differences existed in the need for education/training of employees as perceived by management/supervisory personnel among the four types of agribusinesses. The results of the analysis of variance procedures, as reported in Table 4, revealed that there were significant differences among the four agribusinesses and the hypothesis was rejected. Items which produced significantly different responses were: (a) employees who participate in adult education/training programs to improve job performance skills will have greater job security; (b) a greater knowledge of the agricultural

Table 4
Comparison of Management/Supervisor Perceptions of Factors Related to the Need for Education/Training by Business Sector

Factor	Business Sector ^a				F	p
	P ^b	S	H	M		
	X	X	X	X		
	SD	SD	SD	SD		
	(N = 10)	(N = 22)	(N = 10)	(N = 23)		
Jobs becoming more complex	3.00BC ^c 0.82	3.33AB 0.73	3.70A 0.31	2.82C 0.62	4.18	.009
Increases the likelihood of job advancement	2.90 0.86	2.74 0.55	2.80 0.57	2.80 0.42	1.62	.194
Part. results in greater job security	3.00A 0.76	2.91A 0.52	2.30B 0.65	3.09A 0.42	4.64	.006
Encouraged to part. by manager/supervisor	2.70 0.76	3.00 0.79	2.30 1.07	3.05 0.60	2.52	.067
Additional career counsel needed	3.10 0.63	2.83 0.47	2.70 0.58	2.82 0.38	1.15	.335
Greater knowledge of tech. advances	2.60 0.63	2.78 0.58	2.90 0.58	3.00 0.50	1.04	.359
Rd./train. should be offered at workplace	2.50 0.40	2.83 0.58	3.00 0.64	2.86 0.65	1.16	.333
Part. should be rewarded with salary increases	2.50 0.72	2.74 0.62	2.70 0.58	2.77 0.42	0.53	.661
Additional tech. agric. knowledge needed	3.00A 0.66	2.228 0.59	3.00A 0.69	2.77A 0.54	5.19	.003
Greater knowledge of agric. industry	3.00A 0.64	2.308 0.73	2.90A 0.33	2.64AB 0.75	3.19	.029
Greater knowledge of the role of the business	2.50 0.87	2.57 0.61	2.20 0.45	2.55 0.54	1.00	.401

^aBusiness sectors are: P = agricultural products; S = agricultural supplies and services; H = horticulture; M = agricultural mechanics
^bResponses were coded: 1 = strongly disagree; 2 = disagree; 3 = agree;

^c4 = strongly agree

^dMeans having letter designations in common are not significantly different from each other (alpha = .05).

industry would improve the job performance of employees I supervise; (c) employees I supervise need additional technical agricultural knowledge; and (d) jobs performed by employees I supervise are becoming more complex.

Respondents in horticulture agreed ($x = 3.70$) that jobs performed by the employees they supervised were becoming more complex. This perception was significantly different from the perceptions of respondents in the agricultural products ($x = 3.00$) and agricultural mechanics sectors ($x = 2.82$). The perceptions of respondents in the agricultural supplies and services sector ($x = 3.33$) were not significantly different from those in the horticulture or agricultural products sectors, but were found to differ from agricultural mechanics sector respondents.

Respondents in agricultural products ($x = 3.00$), agricultural supplies and services ($x = 2.91$), and agricultural mechanics ($x = 3.09$) tended to agree that participation in education/training programs would result in greater job security. Horticulture ($x = 2.30$) tended to disagree.

Respondents in the agricultural products ($x = 3.00$), horticulture ($x = 3.00$), and agricultural mechanics sectors ($x = 2.77$) agreed that additional technical agricultural knowledge was needed by their employees while respondents in the agricultural supplies and services sector ($x = 2.22$) disagreed.

Respondents in the agricultural supplies and services sector ($x = 2.30$) also disagreed that a greater knowledge of the agricultural industry would improve the job performance skills of the employees they supervised. This perception was significantly different from respondents in agricultural products ($x = 3.00$) and horticulture sectors ($x = 2.90$). The perceptions of respondents in the agricultural mechanics sector ($x = 2.64$) were not significantly different from the other agribusiness sectors which were surveyed.

Conclusions and Implications

A need exists to develop educational/training programs for urban agribusiness employees. Individuals who are responsible for planning and conducting adult agriculture programs should work cooperatively with agribusinesses to develop programs to meet needs which are specific to each agribusiness sector. Employees from all levels should be encouraged to participate in educational/training programs to improve their job performance skills.

The next step in the process of planning and conducting adult educational/training programs for urban agribusiness employees requires that a dialogue be initiated among agricultural educators and agribusiness management personnel. Agricultural educators should function as facilitators with agribusinesses and the state departments of education to provide the leadership necessary to assist in fulfilling the educational/training needs of urban agribusiness employees.

References

- AgFocus (1986). America looks at agriculture: An analysis of contemporary attitudes on basic issues: Briefing book number 1. A Project of America's Governors, Inc., Helena, MT.
- Anderson, M.R. (1982). A paradigm to determine the perceived educational needs of employees in Clark and Fayette counties. Unpublished doctoral dissertation, The Ohio State University, Columbus, OR.

- Barrick, K., Miller, L., Van Tilburg, E., & Warmbrod, R. (1985). Measurement and analysis in descriptive research. AVA Pre-session Conference in Research, Atlanta, GA
- Beach, D.S. (1980). Personnel: The management of people at work. (4th ed.). New York: Macmillan Publishing Co., Inc.
- Hatch Act. (1887). (United States Statutes at Large, volume 24, Chapter 314, p. 440, 49th Congress).
- Holton, T.L. (1986). Perceived educational needs of agribusiness in Knox County, Ohio. Unpublished master's thesis, The Ohio State University, Columbus, OH.
- Missouri Department of Elementary and Secondary Education (1986). Shaping the future of agricultural education: Recommendations for excellence, Jefferson City, MO.
- Morrill Act. (1862). (United States Statutes at Large, Volume 12, Chapter 314, p. 503, 37th Congress).
- Shelhamer, V., Bishop, D., & Douglas, B. (1984). Personal characteristics which make people more employable in agribusiness. U.S. Educational Resources Information Center (ERIC Document Reproduction Service No. ED 263 726)
- Smith-Hughes Act. (1917). (Public Law 347, 929-36, 64th Congress).
- Smith-Lever (1914). (Public Law 95, United States Statutes at Large, Volume 38, Chapter 79. p. 372, 63rd Congress).