

Career Paths, Job Satisfaction, and Employability Skills of Agricultural Education Graduates



Bryan L. Garton¹ and J. Shane Robinson²
Department of Agricultural Education
University of Missouri
Columbia, MO 65211

Abstract

The career paths pursued by agricultural education graduates from the University of Missouri were explored. In addition, graduates' job satisfaction, employability skills required for their careers, and the contribution of the degree program's curriculum in developing the skills were assessed. Graduates pursued a variety of careers, with approximately two-thirds employed as secondary agriculture teachers, sales representatives, or in managerial positions. Graduates teaching secondary agriculture and graduates employed in industry were equally satisfied with their chosen career. For graduates changing employment, a change in career goals or ambitions had the greatest influence on their decision, while being unprepared for the position was not a factor. Graduates rated "getting along with people," "planning and completing projects," and "analyzing information to make decisions" as the employability skills with the greatest need. When factoring in the contribution of the program's curriculum, "analyzing information to make decisions" rose to the top as a need for improvement.

Introduction

There is a need for higher education to prepare graduates for the demands of industry (Martin et al., 2000). However, due to a fast-paced, ever-changing world, researchers have noted the challenges higher education has in preparing graduates for the skills industry requires (Candy and Crebert, 1991; Martin et al., 2000). With these challenges in mind, higher education must continually assess and modify the curriculum to meet the needs of students (Furhmann and Grasha, 1983) and prepare them for the workforce (Evers et al., 1998; Martin et al., 2000; McLaughlin, 1995). To make the necessary adjustments, educators should recognize which employability skills are most needed by graduates because, given the appropriate skills, they will likely possess a positive attitude toward performing the tasks of the job. Gilmer and Deci (1977) concluded that "workers' attitudes toward their jobs reflect the extent to which they are satisfied with their jobs and their work lives" (p. 228).

In addition to teaching agriculture in public schools, graduates of university agricultural educa-

tion programs enter professions outside of school-based teaching. Cartmell and Garton (2000) revealed that slightly more than one-third of agricultural education graduates entered professions outside of school-based teaching. Because of the diversity of career interests and the variety of opportunities agricultural education graduates have available, faculty often find it challenging to prepare students for the array of skills required for success in their respective employment.

While agricultural education faculty pride themselves in preparing quality teachers for public schools, Bender (1977) warned against programs becoming too narrowly focused. Barrick (1993) suggested that agricultural education programs were competent in preparing students in human resource development and management, leadership, communication, and social science research. Newcomb (1993) stressed that agricultural education programs needed to focus on identifying and addressing the needs of students not being met. To address the needs of students, faculty and departments of agricultural education have a responsibility to not only recognize student diversity in the program, but to build a relationship with them as well. In an era when agricultural education is concerned with informing people about agriculture, students must be literate in the subject matter, have the skills to effectively communicate, and be successful in finding employment after graduation.

Scanlon et al. (1996) stated that "if agricultural education programs are to survive, they must be dynamic and able to adjust to new situations and environments that help to improve the on-the-job effectiveness of future graduates" (p. 1). Therefore, continual adjustments need to be made to the curriculum to meet the needs of students in an ever-changing workforce. Such adjustments also assist in ensuring that the program does not become too narrowly focused.

Job satisfaction plays an important role in determining whether or not graduates remain in their chosen career. A review of the literature revealed that job satisfaction studies have been conducted pertaining to agricultural education graduates (Castillo and Cano, 1999; Castillo et al., 1999; Walker, 2002). However, a majority of the studies only investigated the satisfaction level of

¹Associate Professor; Email: gartonb@missouri.edu

²Graduate Research Assistant; Email: jrdh4@mizzou.edu

Career Paths

school-based teachers. One study compared the satisfaction level of both school-based teachers and graduates employed in industry positions (Miller and Wolosyk, 2002). In this study at Western Michigan University, the job satisfaction of career and technical education graduates employed in public schools was compared with those in business and industry. The study concluded that 86% of graduates with careers in public schools and 66% of graduates in industry were satisfied that their undergraduate degree program prepared them for career success.

Ubom and Joshua (2004) stated that the main reason employees work is to satisfy their needs in life. Therefore, this study was based upon the theory of Maslow's Need Hierarchy Model (1943). Maslow (1943) posited that five basic needs must be met for individuals to experience satisfaction in life. The five needs in hierarchical order from most important to least important are: physiological, safety, belongingness, esteem, and self-actualization (Steers and Porter, 1975). Maslow (1943) suggested that once the lower level needs are met, individuals can then move on to meet higher level needs. "Once a need becomes satisfied it loses its potency as a motivating force until it again becomes manifest" (Steers and Porter, 1975, p. 31-32). This theory could explain why certain employees choose the profession they do, why they identify certain employability skills needed, and why they leave their initial job in pursuit of another.

Following the review of the literature, several questions arise: Is the agricultural education program at the University of Missouri meeting the educational needs of students with diverse career aspirations? Can the program prepare students equally as well for school-based teaching positions and careers in industry? Finally, is the agricultural education program successful in preparing students for a variety of careers in industry?

Purpose and Objectives

The purpose of the study was to investigate the career paths pursued by agricultural education graduates of the University of Missouri. In addition, the study sought to assess the job satisfaction of graduates, the employability skills required for their chosen careers, and to evaluate the contribution of the agricultural education program's curriculum in developing these skills. The following research objectives were formulated to guide the study:

1. Describe the employment status and career paths pursued by graduates of the agricultural education program.
2. Compare the level of job satisfaction between graduates teaching school-based agriculture with graduates pursuing careers in industry.
3. Identify factors influencing graduates to change career paths (occupations).
4. Describe the employability skills required by graduates in their current career paths and assess the

contribution of the agricultural education curriculum in developing the skills.

5. Assess the overall program with regard to the preparation of students for careers in industry and teaching school-based agricultural education.

Methods

The research methodology used was a descriptive survey. The population consisted of a five-year census of agricultural education graduates (N = 112) at the University of Missouri from May 1999 through May 2003. Graduates had earned a degree in agricultural education in one of two emphasis areas: teacher certification or leadership. Graduates completing the teacher certification emphasis area sought teacher licensure while developing skills in teaching agriculture in formal school-based settings. Graduates completing the leadership emphasis focused on developing and applying leadership, communication, and human relation skills to careers in industry. They further learned to plan, manage, and disseminate information in non-formal educational settings. Fifty-one (46%) of the graduates completed the teacher certification option, while 61 (54%) completed the leadership option.

Two parallel questionnaires were developed to collect data, one for graduates with careers in industry and one for individuals teaching school-based agriculture. The questionnaires consisted of seven sections: occupational status, current job satisfaction, factors influencing occupational change, educational experiences, program assessment, quality of academic advising, and open-ended questions. The job satisfaction section of the questionnaire was developed using the Brayfield-Rothe (1951) job satisfaction instrument, as modified by Warner (1973). This section consisted of 14 questions on job satisfaction and dissatisfaction factors and used a five-point Likert scale ranging from "strongly agree" to "strongly disagree." The researchers developed the remaining six sections of the questionnaire.

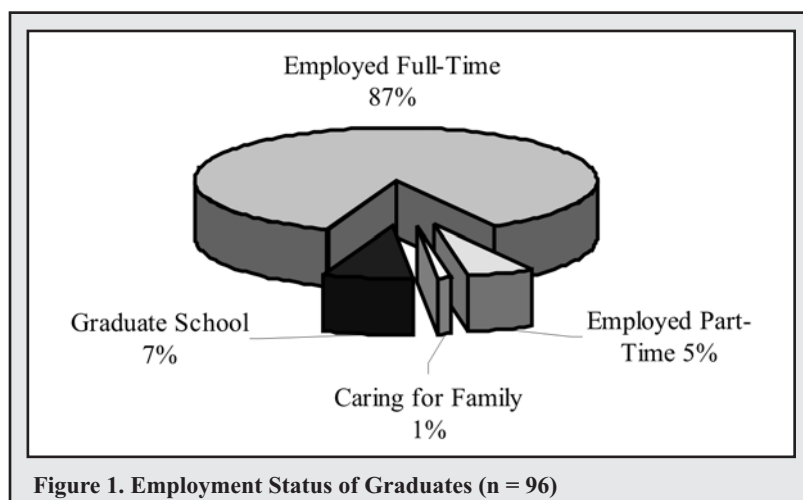
A panel of experts consisting of university faculty and career placement directors established content and face validity. Reliability for the job satisfaction section was established through prior research with secondary agriculture teachers. Cano and Miller (1992) reported a Cronbach's alpha coefficient of .94 for the summated scale. Reliability for the remaining sections was established through a pilot test with 16 agricultural education seniors. Spearman-Brown split-half reliability coefficients ranged from .82 for the quality of academic advising section to .69 for the employability skills section.

The total design method was followed for collecting data (Dillman, 2004). Postcards announcing the forthcoming questionnaire were mailed two weeks prior to mailing the complete questionnaire package, consisting of a cover letter, questionnaire, and prepaid return envelope. Follow-up consisted of a

postcard sent to non-respondents ten days after the initial mailing of the complete package. A second complete package was mailed to non-respondents ten days after the follow-up postcard. A total of 96 graduates responded for an 86% response rate.

Results and Discussion

Objective one sought to describe the employment status and career paths pursued by graduates. Of the 96 respondents, 47 (49%) had graduated with the teacher certification option and 49 (51%) had completed the leadership option. A majority of the graduates (87%) were employed full-time; seven percent were pursuing graduate degrees, with the remaining (6%) being employed part-time or caring for family (Figure 1).



Graduates of the program were employed in a variety of career paths. Regarding graduates employed full-time, approximately two-thirds (68%) were employed as secondary agriculture teachers, sales representatives, or in management positions (Table 1). The remaining graduates were involved in graduate school, industry education and training, communications, production agriculture, financial services, and government agencies. Forty-seven of

	F	%	Cumulative %
Teaching (Secondary)	37	38.5	38.5
Sales	15	15.6	54.2
Management	13	13.5	67.7
Graduate School	7	7.3	75.0
Education-Training (Industry)	5	5.2	80.2
Communications	5	5.2	85.4
Other	5	5.2	90.6
Production Agriculture	3	3.1	93.7
Financial Services	3	3.1	96.9
Government Agencies	3	3.1	100.0
Total	96	100.0	

Career Path	N	M	SD
Public School Teaching	36	4.14	.41
Industry Career	56	4.14	.46
Overall	92	4.14	.44

Note. Scale: 1 = Strongly Disagree to 5 = Strongly Agree

the 96 graduates completed the requirements for teacher certification, of which, 37 (79%) were currently teaching agriculture at the secondary level. Of the graduates completing the leadership emphasis, nearly 40% were employed in sales and management, and approximately 10% were involved in industry education-training and communication positions.

The purpose of objective two was to compare the level of job satisfaction between graduates teaching school-based agriculture with graduates with careers in industry. The summated job satisfaction mean for graduates teaching agriculture in public schools was 4.1 (SD = .41), which was identical to the summated mean job satisfaction for graduates with careers in industry (M = 4.1, SD = .46) (Table 2).

Objective three sought to identify factors influencing graduates to change careers or occupations. Thirty-one (32%) graduates had changed careers or occupations from their initial employment. A change in “career goals or ambitions” (M = 3.4) was the greatest influential factor on graduates changing careers or occupations (Table 3). Being “unprepared for the position” had little to no influence on graduates’ decision to change careers, as were the 12 remaining factors.

The fourth objective sought to describe the employability skills required by graduates in relation to their current occupation and assess the contribution of the agricultural education curriculum in developing the skills. Graduates were asked to rate the importance of 15 employability skills in relation to their current occupation and assess the contribution of the agricultural education curriculum in developing the skills. To compute this information, importance and contribution data were combined using the Borich (1980) needs assessment model. A discrepancy score for each individual on each employability skill was calculated by taking the importance minus the contribution (competence) rating. A weighted discrepancy score was then calculated for each individual on each of the employability skills by multiplying the discrepancy score by the mean importance rating. A mean weighted discrepancy score for each of the employability skills was then calculated by taking the sum of the weighted discrepancy scores, divided by the number of respondents (n = 96). The competencies were then ranked, from high to low; using the mean weighted discrepancy scores (Table 4).

“Analyzing information to make decisions” had the greatest mean weighted discrepancy score of the 15 employability skills (MWDS = 2.73), while “working as a team member” was the lowest (MWDS = -.08). In all, four employability skills had mean weighted discrepancy scores greater than 2.0: “analyzing information to make decisions”, “getting along with people”, “defining and solving problems”,

Table 3. Factors Influencing Career or Occupational Change (n=31)

Factors	M	SD
Career goals/ambitions changed	3.42	1.50
Lack of employer/supervisor support	2.52	1.71
Salary was inadequate	2.48	1.50
Working hours were too long	2.48	1.53
The position was not what I expected	2.45	1.46
Little opportunity for advancement	2.32	1.47
I was burned out and needed a change	2.32	1.70
Location did not meet my lifestyle	2.29	1.35
Spouse's employment	2.03	1.58
Benefits (health care, retirement) did not meet my needs	2.00	1.44
Inadequate facilities and equipment	1.77	1.19
Working conditions were inadequate	1.71	1.04
I was unprepared for the position	1.68	.98
Personality conflicts with co-workers	1.55	.81

Note. Scale: 1 = No Influence; 2 = Little Influence; 3 = Some Influence; 4 = Much Influence; 5 = Considerable Influence

Table 4. Graduates' Perceptions of the Importance of Employability Skills and the Contribution of the Curriculum toward Developing the Skills (n = 95)

Employability Skills	Importance of Skill ^z		Contribution of Curriculum ^y		MWDS ^x
	M	SD	M	SD	
1. Analyzing information to make decisions	3.81	.39	3.09	.73	2.73
2. Getting along with people	3.92	.28	3.35	.71	2.23
3. Defining and solving problems	3.73	.49	3.16	.76	2.12
4. Understanding cultural and ethnic differences	3.15	.86	2.51	.77	2.02
5. Understanding international issues	2.98	.87	2.36	.82	1.84
6. Exercising rights and responsibilities of a citizen	3.12	.77	2.54	.79	1.81
7. Working with people with differing attitudes and opinions	3.65	.56	3.23	.68	1.54
8. Analyzing and drawing conclusions from data	3.41	.69	2.96	.74	1.54
9. Planning and completing projects	3.83	.38	3.53	.58	1.17
10. Understanding the interaction of people and the environment	3.37	.72	3.04	.77	1.15
11. Developing and using leadership skills	3.69	.55	3.48	.67	.74
12. Using a variety of information sources	3.55	.73	3.40	.68	.52
13. Using verbal communication skills	3.83	.40	3.76	.56	.28
14. Using written communication skills	3.54	.71	3.46	.63	.26
15. Working as a team member	3.55	.68	3.59	.61	-.08

^z1 = No Importance, 2 = Minor Importance, 3 = Moderate Importance, 4 = Major Importance
^y1 = No Contribution, 2 = Minor Contribution, 3 = Moderate Contribution, 4 = Major Contribution
^xMean Weighted Discrepancy Score

Table 5. Graduates Perceptions of the Overall Program by Career Path (n = 96)

Characteristic	Teaching		Industry		Overall	
	M	SD	M	SD	M	SD
1. Faculty Competence	3.78	.42	3.69	.46	3.73	.45
2. Quality of Instruction	3.68	.48	3.66	.48	3.67	.47
3. Curriculum Organization	3.68	.48	3.66	.58	3.67	.54
4. Availability of Ag Ed Courses	3.68	.58	3.63	.49	3.65	.52
5. Student Organizations	3.75	.60	3.54	.63	3.62	.62
6. Quality of Students	3.57	.56	3.58	.53	3.57	.54
7. Internship Experiences	3.46	.84	3.56	.77	3.50	.81
8. Course Quality in Preparation for Graduate School	3.52	.63	3.40	.71	3.46	.67
9. Course Quality in Preparation for Employment	3.38	.59	3.37	.59	3.38	.59
10. Availability of Courses Outside of Ag Ed	3.24	.68	3.16	.62	3.19	.64
11. Support Since Graduation	3.24	.87	2.76	.86	2.99	.89
12. Computer Support	3.00	.79	2.96	.83	2.98	.81
13. Ag Ed Facilities	3.11	.74	2.88	.77	2.97	.76
14. Job Placement Services	3.19	.92	2.61	.83	2.85	.91

Note. Scale: 1 = Poor, 2 = Fair, 3 = Good, 4 = Excellent

verbal and written communication, and teamwork.

Objective five sought to assess the overall program toward the preparation of students for careers in industry and school-based teaching (Table 5). Graduates were asked to rate 14 questions on a 5-point Likert scale concerning the overall program. Graduates rated seven of the 14 characteristics as excellent, with faculty competence (M = 3.7) being ranked the highest. The remaining seven characteristics were perceived to be good, with job placement services having the lowest ranking. Virtually no differences were found between graduates of the two career paths, school-based teaching and careers in industry, on 12 of the 14 program characteristics. However, moderate differences were found between the two groups with regard to support since graduation and job placement services.

Summary

Agricultural education graduates from the University of Missouri are entering a wide variety of career paths. Nine out of 10 graduates (94%) are employed full-time or enrolled in graduate or professional schools. The remaining graduates (6%) indicated, by choice, they are either employed part-time and/or caring for their family. Approximately two-thirds (68%) of the graduates employed full-time are school-based agriculture teachers or are involved in industry sales or management positions. When looking solely at teacher certification option graduates, approximately four out of

and “understanding cultural and ethnic differences”. The five employability skills rated the lowest, all with a mean weighted discrepancy scores below 1.0, involved leadership skills, sources of information,

five (79%) are currently teaching in public schools. This percentage exceeds national data where 56% of newly certified agricultural education majors are

entering school-based teaching positions (Camp, 1998). With regard to graduates of the leadership option, one-half (50%) are employed in sales, management, industry education-training, and communication careers.

Overall, graduates of this program are satisfied with their chosen career fields, as indicated by their level of job satisfaction. No difference was found regarding the level of job satisfaction between graduates with school-based teaching careers and graduates with careers in industry. Based on the findings of the current study, one could imply that graduates of the program are satisfied with their choice of degree program and ultimately with their career decision.

Approximately one-third (32%) of the graduates had changed careers or occupations since their initial employment. An overwhelming majority of the occupational changes occurred by graduates employed in industry, as 37 of the 42 (88%) graduates who initially began a career in school-based teaching remain in the profession. A “change in career goals and ambitions” was the highest rated factor influencing graduates to change careers or occupations. It is important to note that burnout and working hours had little to no influence on graduates' decision to change careers or occupations. This finding is important as it is often hypothesized that these two factors are major contributors to the loss of school-based teachers. Additionally, preparation for the position and expectations of the position had little to no influence on graduates' decision to change careers. This conclusion provides support for the implication that this agricultural education program can successfully prepare graduates for careers in industry and school-based teaching.

Through the use of the Borich (1980) needs assessment model, four employability skills were targeted for curriculum improvement. Therefore, it is recommended that modifications be made to the content of existing courses to increase students' opportunities to analyze information in making decisions, interact with individuals of diverse personalities, define and solve problems, and gain an appreciation of cultural and ethnic differences. All five of the lowest rated employability skills in need of curriculum modifications are cornerstones of the mission and purpose of the leadership emphasis. This conclusion would provide credence to the implication that the leadership emphasis is adequately achieving its intended propose.

With regard to graduates' perception of the overall program, the conclusion can be drawn that graduates are generally very positive toward the degree program. Furthermore, no differences existed between the perception of graduates with careers in industry and those choosing school-based teaching as a career, with the exception of “support since graduation” and “job placement services”. Therefore, it is recommended that the program make a more

concerted effort to communicate with and offer assistance to graduates pursuing careers in industry.

The findings provide evidence to the versatility of this agricultural education degree program and curriculum in preparing individuals for school-based teaching careers as well as a variety of careers in the agriculture, food and fiber industry. The information gained from this study should be used in developing recruitment materials and promoting the strength and versatility of this agricultural education degree program. The information should be shared with current students to highlight the program's ability to prepare students for a variety of careers in the agriculture, food and fiber industry.

Literature Cited

- Barrick, R.K. 1993. A conceptual model for a program of agricultural education in colleges and universities. *Jour. of Agr. Education*, 34 (3), 10-16.
- Bender, R.E. 1977. The program of agricultural education with implications for colleges of agriculture and natural resources. In D.L. Armstrong, Impact of enrollments and student body composition on academic programs, design, and delivery, a RICOP report. East Lansing: Michigan State University.
- Borich, G.D. 1980. A needs assessment model for conducting follow-up studies. *Jour. of Teacher Education*, 3 (3), 39-42.
- Brayfield, A.H., and H.F. Rothe. 1951. An index of job satisfaction. *Jour. of Applied Psychology*, 35, 305-311.
- Camp, W.G. 1998. A national study of the supply and demand for teachers of vocational agriculture in 1995. Blacksburg: Agr. and Extension Education, Virginia Tech.
- Candy, P. C. and R.G. Crebert. 1991. Ivory tower to concrete jungle. The difficult transition from the academy to the workplace as learning environments. *Jour. of Higher Education*, 62(5), 570-592.
- Cano, J., and G. Miller. 1992. A gender analysis of job satisfaction, job satisfier factors, and job dissatisfier factors of agr. education teachers. *Jour. of Agr. Education*, 33 (3), 40-46.
- Cartmell, D.D., and B.L. Garton. 2000. An assessment of agr. education graduates' preparation for careers in teaching and industr Proc. of the Twenty-Seventh National Agr. Education Research Conference (p. 530-541), San Diego, CA.
- Castillo, J. X. and J. Cano. 1999. A comparative analysis of Ohio agriculture teachers' level of job satisfaction. *Jour. of Agri. Education*. 40 (4), 67-76.
- Castillo, J. X., E.A. Conklin, and J. Cano. 1999. Job satisfaction of Ohio agr. education teachers. *Jour. of Agr. Education*, 40 (2), 19-27.
- Gilmer, B. and E. Deci. 1977. *Industrial and organizational psychology*. NY: McGraw-Hill.
- Dillman, D.A. 2004. *Mail and internet surveys: The*

Career Paths

- total design method. New York, NY: John Wiley and Sons.
- Evers, F. T., J.C. Rush, and I. Berdrow. 1998. The bases of competence. Skills for lifelong learning and employability. Jossey-Bass Publishers, San Francisco.
- Fuhrmann, B. S., and A.F. Grasha. 1983). The past, present and future in college teaching: Where does your teaching fit? In A practical handbook for college teachers (pp. 1-20). Boston, MA: Little, Brown, and Company.
- Martin, A. J., J.Milne-Home, J. Barrett, E. Spalding, and G. Jones. 2000. Graduate satisfaction with university and perceived employment preparation. Jour. of Education and Work, 13(2), 201-213.
- Maslow, A. H. 1943. A theory of human motivation. Psychological Review, 50, 370-396.
- McLaughlin, M. 1995. Employability skills profile: What are employers looking for? ERIC Digest.
- Miller, P. J. and C.A. Wolosyk. 2002. Where do CTE teacher education graduates go? Career and technical teacher education five-year graduate follow-up study. Paper presented at the 76th Annu. Conference of the Association for Career and Technical Education Research Conference, Las Vegas, NV.
- Newcomb, L.H. 1993. Transforming university programs of agricultural education. Jour. of Agr. Education, 34 (1), 1-10.
- Scanlon, D.C., T.H. Bruening, and A. Cordero. 1996. An industry perspective on changes needed in agricultural education curricula. Jour. of Agr. Education, 37 (2), 17-23.
- Steers, R. M. and L.W. Porter. 1975. Motivation and work behavior. New York: McGraw-Hill Series.
- Ubom, I. U. and M.T. Joshua. 2004. Needs satisfaction variables as predictors of job performance of employees: Implications for guidance and counseling. The African Symposium. An On-line Educational Research Jour. 4 (3), 1-7.
- Walker, W. D. 2002. Retention and attrition of Missouri agriculture teachers. Unpublished doctoral diss., Univ. of Missouri-Columbia: Columbia.
- Warner, P. D. 1973. A comparative study of three patterns of staffing within the cooperative extension organization and their association with organizational structure, organizational effectiveness, job satisfaction, and role conflict. Unpublished doctoral diss., Ohio State University: Columbus.

**“Advancing the scholarship of
teaching and learning”**

