

The Importance of Writing in the Agricultural Industry

Holli Leggette, Independence Community College
Shelly Sitton, Oklahoma State University
Cindy Blackwell, Oklahoma State University

Abstract

This descriptive study focused employers' perceptions of the importance of writing in the workplace and the writing abilities of the graduates of Midwestern university's agricultural college. These recruiters primarily represent profit organizations and recruit for business- and management-type positions in the United States. The majority of the Agricultural, Food, Environmental, and Natural Sciences Career Fair recruiters who responded in this study reported they took writing skills into consideration frequently or almost always, and they assessed the writing abilities of graduates most frequently by their written letter of application. In addition, recruiters indicated almost all of their employees have some responsibility for writing, and the most frequent type of writing is e-mail correspondence. Overall, recruiters reported they were satisfied with the writing abilities of the graduates of the Midwestern university's agricultural college. Furthermore, the results of this study were comparable to the national study conducted by The National Commission on Writing for America's Families, Schools, and Colleges in 2004.

Introduction/Conceptual Framework

In the 21st Century, communication skills have become a must in the workforce (National Association of Colleges and Employers, 2006). "The 'perfect' candidate for the job is a top-notch communicator and a hard worker" (NACE, 2007). To increase the awareness of the need for more writing in the workplace, The National Commission on Writing for America's Families, Schools, and Colleges (NCoW) produced a series of reports reflecting the need for writing in the workplace and beyond (NCoW, 2003; NCoW, 2004; NCoW, 2005; NCoW, 2006). According to NCoW (2003), "Writing is not a frill for the few, but an essential skill for the many" (p. 11). The commission's 2004 report indicated the need for writing in the workforce, and its 2005 report explored the importance of writing in the government sector, finding writing is more important in the American government sector than it is in the non-governmental workplace (NCoW, 2005). Additionally, the 2006 report looked at writing from the students' point of view (NCoW, 2006).

As today's students will be tomorrow's employees, Stevens (2005) assessed employers' satisfactions with graduates' writing abilities and found employers were not fully satisfied with graduates' business communications skills or workplace writing skills. Brand, Gartin, Boone, and Boone (2006) found graduates from the West Virginia University College of Agriculture, Forestry, and Consumer Sciences are somewhat prepared for the workforce with their written communication skills. Additionally, they found employers felt written communication skills were important skills for entry-level employees, but one employer commented writing abilities were lacking among college graduates (Brand, Gartin, Boone, & Boone, 2006). Andelt, Barrett, and Bosshamer (1997) determined employers wanted agricultural graduates with strong

communications skills. By assessing the communication needs of the agricultural industry, educational institutions should close the gap between the skills of new college graduates and the needs of the industry (Andelt, Barrett, & Bosshamer, 1997; Stevens, 2005). The National Commission (2004) and Andelt, Barrett, and Bosshamer (1997) indicated if students are to be successful in the workplace and life, they must be able to write. However, employers report graduates fall short in their communication skills (NACE, 2006).

Writing in agriculture began as early as 1588 with information dissemination from one to another but continues today through major organizations (Boone, Meisenbach, & Tucker, 2000; Burnett & Tucker, 2001). The founding principles of land grant institutions were to educate rural students with technical skills needed for success as well as basic skills, such as writing (Benjamin, 1962; Burnett & Tucker, 2001; McDowell, 2002; McDowell, 2003). According to Burnett and Tucker (2001), new college graduates have become the diffusers of information, so they must have the ability to convey information effectively. “A professional education requires a knowledge of the liberal arts to be complete” (Orr, 1996, p. 2831). According to the National Commission on Writing (2006), educators need to create a writing-friendly environment for students to prosper and use their basic skills. For writing education to have success, students must see it as purposeful not as a necessity (NCoW, 2006).

As the communication needs change in the agricultural industry, universities and colleges need to adjust to the needs of the industry (Gerson & Gerson, 1994; Singh, Ekanem, Tegegne, Muhammad, & Comer, 2004) and need to evaluate employers’ perceptions of students’ writing abilities (Stevens, 2005). Because of the continued need for strong communication skills in the workplace, Stevens (2005) recommended colleges and universities review the writing abilities of their graduates every three to five years. “In an era when agricultural education is concerned with informing people about agriculture, faculty must ensure students are literate in the subject matter, have the skills to effectively communicate, and are successful in finding employment after graduation” (Garton & Robinson, 2006, p. 553). According to Scanlon and Baxter (1993), new college graduates want to obtain skills such as writing, so they can be more prepared for the workplace.

Graduates’ ability to write in the workplace may be the key to obtaining their dream job (NACE Research, 2006; Stewart, 1987) because the National Association of Colleges and Employers Job Outlook 2006 found employers seek strong communication skills more than any other skills in recent college graduates. Although some educators argue communication skills should not be taught outside the walls of an English classroom (Stewart, 1987), “developing the kinds of thoughtful writers needed in business, and elsewhere in the nation’s life, will require educators to understand writing as an activity calling for extended preparation across subject matters — from kindergarten through college” (NCoW, 2004, p. 20). Smith and Bernhardt (1997) considered writing a business commodity and the center of business communication. “In a widely heralded information economy, written information (whether in hard copy or electronic form) is often the commodity that is being traded” (Smith & Bernhardt, 1997).

“General education at [state university] is intended to construct a broad foundation for the student’s specialized course of study; develop the student’s ability to read, observe and listen with comprehension; enhance the student’s skills in communicating effectively;

expand the student's capacity for critical analysis and problem solving; assist the student in understanding and respecting diversity in people, beliefs and societies; and develop the student's ability to appreciate and function in the human and natural environment" ([state university], 2007, p. 13).

Flowers and Reaves (1991), Maciorowski and Ricke (2000), and Scanlon and Baxter (1993) characterized writing as a way to learn in an agricultural course. Written communication should be a part of learning in all disciplines, not just English (Stewart, 1987; NCoW, 2003; Smith, Charnley, & McCall, 1993; Flowers and Reaves, 1991). University and college faculty and administration need to integrate writing across all disciplines, including agriculture (NCoW, 2003; Smith, Charnley, and McCall, 1993). The writing-across-the-curriculum movement was developed to help improve the writing skills in all disciplines (Scanlon and Baxter, 1993) and has been used with success in an animal science course at the University of Kentucky (Aaron, 1996), forestry courses at Virginia Tech and North Carolina State University (Wellman, McMullen, and Hirsch, 1990), and an animal science course at Berea College in Kentucky (Orr, 1996). Wellman, McMullen, and Hirsch (1990) found although the students did not believe writing was beneficial, writing in forestry courses helped them identify the writing needs within their profession. Agricultural educators have the responsibility to prepare students for the communication demands of the industry (Flowers & Reaves, 1991; Stevens, 2005; Stewart, 1987); however, an agricultural-based classroom cannot sufficiently be changed into an English classroom but rather the basics of English can be included in agricultural curriculum (Tobey, 1979). "Perhaps it's time to sharpen the pencils of our agriculture students and work on one of the essential basic skills valued by the agricultural industry, thinking and communicating thoughts to others" (Flowers & Reaves, 1991, p. 16).

Purpose/Objectives

The purpose of this study was to determine the 2000-2005 Agricultural, Food, Environmental, and Natural Sciences Career Fair recruiters' perceptions of the writing abilities of the graduates of a Midwestern university's agricultural college. To accomplish this purpose, the researchers used the following objectives:

1. Describe selected characteristics of the Agricultural, Food, Environmental, and Natural Sciences Career Fair recruiters and recruiting organizations;
2. Determine the recruiters' perceptions of the importance of writing when recruiting new employees;
3. Determine the recruiters' perceptions of the frequency and types of writing required of a recent college graduate in the recruiters' workplace; and
4. Determine recruiters' perceptions of the writing abilities of the graduates of a Midwestern university's agricultural college.

Methods/Procedures

A descriptive instrument was used to survey recruiters who participated in the Agricultural, Food, Environmental, and Natural Sciences Career Fairs from 2000 to 2005. This population was selected because of its familiarity with new college graduates. According to

Muijs (2004), survey research is a popular non-experimental quantitative research method because it is flexible and allows the researcher to obtain a large amount of information easily. The university's Career Services supplied the researchers with the database containing the recruiters from 2000 to 2005. Even though 142 ($N = 142$) individuals recruited during this time frame, the researchers obtained only 112 sufficient addresses; therefore, 112 ($N = 112$) recruiters were used in the survey. The response rate for the study was 30.36% ($n = 34$).

The researchers obtained approval from The National Commission on Writing to use The Business Roundtable and National Writing Commission Human Resource Survey March 2004 as the basis for the development of the instrument for this study. Muijs (2004) stated a survey should be short and take less than 30 minutes to complete to increase response rates. Additionally, survey feedback, follow-up phone calls, and Web surveys help increase response rates (Muijs, 2004). Furthermore, Dillman (2007) determined Web-based surveys to be one of the best ways to collect data; however, Best and Krueger (2004) suggested some disadvantages to Web-based surveys, which included lack of Internet access, varied survey appearance on every computer, and unreliable participant records. However, by obtaining the recruiters' e-mail addresses, the researchers determined most recruiters had Internet access and used surveymonkey.com to provide uniform on-screen views. Each recruiter received four e-mails — pre-notification e-mail, survey e-mail, follow-up e-mail, and second follow-up e-mail, which contained the link to the surveymonkey.com survey. By clicking on the survey link, the recruiters consented to the terms of the study.

The Web-based instrument contained three parts — organizational demographics, importance of writing skills in the recruitment process and the workplace, and recruiter demographics. Part One of the instrument identified the types of organizations that participated in the Agricultural, Food, Environmental, and Natural Sciences Career Fair, the types of positions for which they recruit, and the number of employees associated with the organization. Part Two of the instrument was related to the importance of writing in the agricultural industry and contained questions about the frequency and types of writing required of recent college graduates. Part Three of the survey identified the demographics of the recruiter. Additionally, the survey asked respondents about their perceptions of their writing abilities upon graduation if they graduated from the Midwestern university's agricultural college.

To determine validity, a panel of experts, which consisted of university faculty and staff, reviewed the instrument (Dillman, 2007; Muijs, 2004). Muijs (2004) also suggested a pilot study be conducted prior to the study to test the reliability of the instrument. The researchers conducted the pilot survey using employers who did not recruit at the Agricultural, Food, Environmental and Natural Sciences Career Fair from 2000 to 2005. The researcher used Statistical Package for the Social Sciences (SPSS[®]) version 15.0 to determine the Cronbach's Alpha — a reliability coefficient — for the scaled items in the instrument. The Cronbach's Alpha was 0.867 for this study, and a coefficient alpha of at least 0.7 is considered reliable (Muijs, 2004). The researchers visually compared the other items in the instrument to ensure reliability; as no differences were detected, no changes were made in the instrument.

Results/Findings

Research objective one addressed selected characteristics of the Agricultural, Food, Environmental, and Natural Sciences Career Fair recruiters and recruiting organizations from January 1, 2000, to December 31, 2005 (Table 1). Nineteen recruiters (55.90%) represented “profit” organizations; the remaining recruiters ($n = 15$) defined the nature of their recruiting organization as “government” ($n = 6$; 17.60%), “education,” ($n = 5$; 14.70%) and “non-profit” ($n = 4$; 11.80%). Fifteen recruiters (45.50%) hire “management and business” positions, while others hire for “agricultural forestry and production” ($n = 7$; 21.20%), “education, communication, and government” ($n = 7$; 21.20%), and “scientific and engineering” ($n = 4$; 12.10%) positions. Five respondents (18.50%) were graduates of the Midwestern university conducting this study.

Table 1
Recruiter and Recruiting Organization Characteristics

Characteristics	<i>n</i>	Percentage (%)
Nature of recruiting organizations		
Profit	19	55.90
Government	6	17.60
Education	5	14.70
Non-Profit	4	11.80
Types of positions for which organizations hire		
Management and Business	15	45.50
Agricultural Forestry and Production	7	21.20
Education, Communication, and Government	7	21.20
Scientific and Engineering	4	12.10
Graduates of the Midwestern University’s Agricultural College		
Yes	5	18.50
No	22	81.50

In addition, recruiters were asked to report the number of individuals employed at the recruiting organizations (Table 2) on January 1, 2006, and the average number of employees and graduates of the Midwestern university’s agricultural college hired annually inside and outside the United States from January 1, 2000, to December 31, 2005. The number of individuals employed on January 1, 2006, inside the United States ranged from 4 to 8,000 ($n = 26$), while the number of employees outside the United States ranged between 0 and 500 ($n = 11$). The average number of employees hired annually from January 1, 2000, to December 31, 2005, inside the United States ranged from 4 to 350 ($n = 25$). The number of employees hired outside the United States ranged from zero to five ($n = 10$). The number of graduates from the Midwestern university’s agricultural college hired inside the United States annually from January 1, 2000, to December 31, 2005, ranged from 0 to 10 ($n = 27$).

Table 2

Employees Within CASNR Recruiting Organizations: January 1, 2000, to December 31, 2007

Employees	Extreme		Mean	Mode	Median
	Low	High			
Employed on January 1, 2006					
Inside the United States	4	8,000	1,237.04	3,000.00	525.00
Outside the United States	0	500	48.36	0.00	0.00
Hired each year					
Inside the United States	4	350	81.72	35.00	35.00
Outside the United States	0	5	0.70	0.00	0.00
Hired each year who are Midwestern university agriculture graduates					
Inside the United States	0	10	2.07	0.00	1
Outside the United States	0	0	0	0	0

Research objective two addressed respondents' perceptions of the importance of writing when recruiting new employees. Using summated-scaled response items (1 = almost never; 2 = occasionally; 3 = frequently; 4 = almost always), the instrument sought information concerning respondents' perceptions of writing when recruiting for professional and hourly staff, including consideration of writing when hiring new employees, impact of a poorly composed job applicant's letter or other written material when hiring, and how often samples of written materials or presentations are required of a job applicant (Table 3). The real limits (Boone, Gartin, Boone & Hughes, 2006) of the scale used on the instrument were 1.00 to 1.49 = almost never; 1.50 to 2.49 = occasionally, 2.50 to 3.49 = frequently, and 3.50 to 4.00 = almost always.

For professional staff, the recruiters reported they "frequently" consider writing when hiring new college graduates ($n = 28$; $M = 3.11$) and a poorly composed job applicant's letter or other written material "frequently" has an impact when hiring ($n = 26$; $M = 3.48$). Furthermore, recruiters reported they "occasionally" require samples of written materials or presentations when hiring professional staff ($n = 29$; $M = 2.07$), effective writing skills are "frequently" important for promotional considerations ($n = 25$; $M = 2.96$), and opportunities to improve writing skills once hired are "occasional" ($n = 26$; $M = 2.35$).

For hourly staff, the recruiters reported they "frequently" consider writing when hiring new college graduates ($n = 26$; $M = 2.54$) and a poorly composed job applicant's letter or other written material "frequently" have an impact when hiring ($n = 24$; $M = 2.88$). Additionally, recruiters reported they "occasionally" require samples of written materials or presentations when hiring hourly staff ($n = 26$; $M = 1.54$), effective writing skills are "frequently" important for promotional considerations ($n = 23$; $M = 2.61$), and opportunities to improve writing skills once hired are "occasional" ($n = 24$; $M = 2.00$).

Moreover, recruiters were asked to identify how they assess a job applicant's writing ability (Table 4). To assess applicants' writing abilities, respondents indicated they use the individual's letter/written application ($n = 23$; 82.10%) and personal communication with references ($n = 18$; 64.30%). Other options were writing sample provided by job applicant ($n =$

13; 46.40%), review of coursework on résumé ($n = 11$; 39.30%), writing test taken during the job interview ($n = 3$; 10.70%), and open Web forum such as e.g., Facebook, MySpace, blogs, etc. ($n = 2$; 7.10%).

Table 3

Employers' Perceptions of the Importance of Writing in the Workplace

	<i>n</i>	<i>M</i>	<i>SD</i>
Professional Staff			
Consideration of writing skills when hiring new employees	28	3.11	1.10
Impact of a poorly composed job applicant's letter or other written material when hiring	27	3.48	0.70
Samples of written materials/presentations required of job applicant	29	2.07	1.10
Importance of effective writing skills when making promotion Decisions	25	2.96	0.79
Opportunities to improve writing skills when an employee possesses poor writing skills	26	2.35	1.06
Hourly Staff			
Consideration of writing skills when hiring new employees	26	2.54	1.07
Impact of a poorly composed job applicant's letter or other written material when hiring	24	2.88	0.85
Samples of written materials/presentations required of job applicant	26	1.54	0.86
Importance of effective writing skills when making promotion Decisions	23	2.61	0.94
Opportunities to improve writing skills when an employee possesses poor writing skills	24	2.00	0.93

Note. Real limits of scale are 1.00 to 1.49 = almost never; 1.50 to 2.49 = occasionally, 2.50 to 3.49 = frequently, 3.50 to 4.00 = almost always.

Table 4

Assessment of a Job Applicant's Writing Ability

	<i>n</i>	Percentage (%)
Impression based on letter/written application	23	82.10
Personal communication with references	18	64.30
Writing sample provided by job applicant	13	46.40
Review of coursework on résumé	11	39.30
Writing test taken during the job interview	3	10.70
Open Web forum (e.g., Facebook, MySpace, blogs, etc.)	2	7.10

In terms of salary negotiations when hiring a new college graduates, recruiters were asked to use the following summated scale to indicate the value of good writing skills: 1 = \$0-\$1,000; 2 = \$1,001-\$2,500; 2.50 to 3.49 = \$2,501-\$5,000; 3.50 to 4.49 = \$5,001-\$7,500; 4.50 to 5.59 = \$7,501-\$10,000; 5.50 to 6.00 = more than \$10,000. Recruiters reported good writing skills are worth between "\$2,501 and \$5,000" ($n = 23$; $M = 3.22$), albeit the large standard deviation indicates variation among the respondents (Table 5).

Table 5

The Value of Good Writing Skills When Hiring New Employees

	<i>n</i>	<i>M</i>	<i>SD</i>
Value of good writing skills	23	3.22	1.83

Note. Real limits of scale are 1.00 to 1.49 = \$0-\$1,000; 1.50 to 2.49 = \$1,001-\$2,500; 2.50 to 3.49 = \$2,501-\$5,000; 3.50 to 4.49 = \$5,001-\$7,500; 4.50 to 5.59 = \$7,501-\$10,000; 5.50 to 6.00 = more than \$10,000.

Research objective three sought to determine the frequency and types of writing required of a recent college graduate (Table 6). Respondents were offered the following summated scale for these items: 1 = a few; 2 = about 1/3rd; 3 = about 2/3rds; and 4 = almost all. For professional staff, recruiters reported “almost all” employees have some responsibility for writing ($n = 28$; $M = 3.5$) and “about 2/3rds” of their employees have effective communication characteristics ($n = 27$; $M = 3.37$). Recruiters indicated “about 2/3rds” of hourly employees have responsibility for writing ($n = 25$; $M = 2.6$) and “about 1/3rd” have effective communication characteristics ($n = 25$; $M = 2.24$).

Table 6

Employers’ Perceptions of Written Communication Practices in the Workplace

	<i>n</i>	<i>M</i>	<i>SD</i>
Professional Staff			
Employees who have some responsibility for writing	28	3.50	0.88
Employees who have effective communication characteristics	27	3.37	0.63
Hourly Staff			
Employees who have some responsibility for writing	25	2.60	1.23
Employees who have effective communication characteristics	25	2.24	0.88

Note. The real limits of the scale are 1.00 to 1.49 = a few; 1.5 to 2.49 = about 1/3rd; 2.50 to 3.49 = about 2/3rds; 3.50 to 4.00 = almost all.

Furthermore, recruiters were asked to identify the types of writing and frequency performed on the job, using a provided summated scale: 1 = almost never, 2 = occasionally, 3 = frequently, 4 = almost always (Table 7). Twenty-one (77.80%) of the recruiters reported employees “almost always” use e-mail correspondence. Fourteen (51.90%) reported employees “frequently” use other memoranda and correspondence and “frequently” use oral presentations with slides and visuals, e.g., PowerPoint. Other writing types were reported as being required less “frequently”: oral presentations without visuals ($n = 27$; 48.10%); formal reports ($n = 27$; 40.70%); and technical reports ($n = 27$; 44.40%). Recruiters indicated employees “occasionally” use Web text ($n = 26$; $M = 2.42$).

Additionally, recruiters were asked to identify the characteristics of effective communication using the provided summated scale: 1 = not at all important, 2 = not very important, 3 = important, and 4 = extremely important (Table 8). Recruiters considered the following communications characteristics as “extremely important”: accuracy ($n = 27$; $M =$

3.89); clarity ($n = 27$; $M = 3.81$); conciseness ($n = 27$; $M = 3.74$); and spelling, punctuation, and grammar ($n = 27$; $M = 3.67$). Visual appeal ($n = 26$; $M = 3.38$) and scientific precision ($n = 25$; $M = 3.28$) were reported as “important.”

Table 7

Types of Writing and Frequency Performed on the Job

	<i>n</i>	<i>M</i>	<i>SD</i>
E-mail correspondence	27	3.78	0.42
Other memoranda and correspondence	27	2.89	0.85
Oral presentations with slides/visuals (e.g., PowerPoint)	27	3.19	0.68
Oral presentations without visuals	27	2.93	0.73
Formal reports	27	2.81	0.96
Technical reports	27	2.74	0.86
Web text	26	2.42	0.99

Note. The real limits of the scale are 1.00 to 1.49 = almost never; 1.50 to 2.49 = occasionally; 2.50 to 3.49 = frequently; 3.50 to 4.00 = almost always.

Table 8

Characteristics of Effective Communication

	<i>n</i>	<i>M</i>	<i>SD</i>
Accuracy	27	3.89	0.32
Clarity	27	3.81	0.40
Conciseness	27	3.74	0.45
Scientific precision	25	3.28	0.74
Visual appeal	26	3.38	0.64
Spelling, punctuation, and grammar	27	3.67	0.64

Note. The real limits of the scale are 1.00 to 1.49 = not at all important; 1.50 to 2.49 = not very important; 2.50 to 3.49 = important; 3.50 to 4.00 = extremely important.

Using a summated scale, recruiters ($n = 17$) reported their annual cost of writing training as “\$0 - \$500” (47.10%), “\$501 - \$1,000” (17.60%), “\$1,001 - \$1,500” (23.50%), and “more than \$1,500” (11.80%).

Research objective four determined employers’ perceptions of the writing abilities of the Midwestern university’s agricultural college graduates. Seven recruiters (46.40%) reported “almost all” agricultural graduates of the Midwestern university had sufficient writing abilities, although the mean ($M = 2.87$) indicated “about 2/3rds” of these graduates were considered to have satisfactory writing abilities. Respondents were offered the following summated scale for this items: 1 = a few; 2 = about 1/3rd; 3 = about 2/3rds; and 4 = almost all.

Respondents were provided with the following summated scale to express their satisfaction with the writing abilities of the Midwestern university’s agricultural college: 1 = not at all satisfied, 2 = not very satisfied, 3 = satisfied, and 4 = extremely satisfied. Eight recruiters

(53.30%) reported they were “satisfied” with hired graduates’ writing abilities (Table 9), and nine (64.70%) were satisfied with the interviewed graduates’ writing abilities.

Table 9

Satisfaction With Writing Abilities of Graduates of a Midwestern University

	<i>n</i>	<i>M</i>	<i>SD</i>
Hired graduates	15	3.20	0.68
Interviewed graduates	17	2.94	0.74

Note. The real limits of the scale are 1.00 to 1.49 = not at all satisfied; 1.50 to 2.49 = not very satisfied; 2.50 to 3.49 = satisfied; 3.50 to 4.00 = extremely satisfied.

Finally, the recruiters could provide additional comments regarding graduates of the Midwestern university’s agricultural college. One recruiter commented, “I have been very pleased with the overall performance of the [Midwestern university’s agricultural college] graduates that I have hired.” However, another commented, “I have not been pleased with the writing skills of our [Midwestern university’s agricultural college] graduates because I continually find myself spending time editing their work.”

Conclusions/Recommendations/Implications

Researchers found career fair recruiters represent profit organizations and recruit predominately for business- and management-type positions. Additionally, their organizations employ as many as 8,000 people and as few as four and hire an average of 81 employees, including on average two graduates of the Midwestern university’s agricultural college, annually. The vast majority of these employees work in the United States.

Recruiters consider writing abilities an important part of the recruiting process and the workplace as they frequently take writing skills into consideration when hiring for both professional and hourly staff. In fact, the respondents reported taking writing skills into consideration slightly more than do the companies of the Business Roundtable (NCoW, 2004), which is comprised of 160 member companies represented by their chief executive officers (Business Roundtable: About us, n.d.). The most frequently assessed item is the applicant’s job application and accompanying business letter.

The vast majority of new agricultural college graduates are responsible to write and use e-mail correspondence in their jobs, which mirrors results for all graduates (NCoW, 2004). Accuracy, clarity, conciseness, and correct grammar are the most important characteristics of effective communication according to recruiters, which parallels The National Commission on Writing 2004 study. However, recruiters indicated fewer employees have effective communications skills that the proportion who have the responsibility for writing in their positions.

Moreover, recruiters are satisfied with the writing abilities of the Midwestern university’s agricultural college graduates. In comparison, The National Commission on Writing (2004)

determined 65% of new college graduates have sufficient writing abilities, which is similar to the “about 2/3rds” reported for the Midwestern university’s agricultural college graduates.

Regrettably, with the small response rate (30.36%), this study’s findings may have rather limited generalizability beyond the participating sample, especially for items with relatively large standard deviations; however, as this study’s results are comparable to the results reported by The National Commission on Writing (2004), they provide a beginning point for consideration when agricultural faculty review curriculum and provide insight to the need to continue to improve writing education.

The researchers recommend faculty, staff, and administration continue to stay abreast of the changing communication needs in the agricultural industry by assessing current writing curriculum in the college, incorporating writing skills into agricultural curriculum, using writing as a way of learning, and preparing students for workforce communication with real-world scenario writing assignments. In addition, faculty should attend career fairs and participate in other networking opportunities to gain employer insight on the writing skills employers want graduates to possess. In addition, research needs to determine instructors’ perceptions of graduates’ writing abilities and evaluate graduates’ satisfactions of their writing education.

According to Stevens (2005), this type of study should be replicated every five years. Therefore, researchers recommend the Midwestern university’s agricultural college, as well as other agricultural colleges, periodically conduct this type of study to ensure graduates meet the communication needs of the agricultural industry.

References

- Aaron, D. K. (1996). Writing across the curriculum: Putting theory into practice in animal science courses. *Journal of Animal Science*, 74, 2810-2827.
- Andelt, L. L., Barrett, L. A., & Bosshamer, B. K. (1997). Employer assessment of the skill preparation of students from the College of Agricultural Sciences and Natural Resources University of Nebraska-Lincoln: Implications for teaching and curriculum. *NACTA Journal*, 41(4), 47-53.
- Benjamin, H. R. W. (1962). Agricultural education in different stages of national development. *Journal of Economic History*, 227(4), 547-554.
- Best, S. J., & Krueger, B. S. (2004). Internet data collection. Thousand Oaks, California: SAGE Publications Inc.
- Boone, Jr., H. N., Gartin, S. A., Boone, D. A., & Hughes, J. E. (2006). Modernizing the agricultural education curriculum: An analysis of agricultural teachers' attitudes, knowledge, and understanding of biotechnology. *Journal of Agricultural Education* 47(1), 78-89.

- Boone, K., Meisenbach, T., & Tucker, M. (2000). *Agricultural communications: Changes and challenges*. Ames, Iowa: Iowa State University Press.
- Brand III, T. H., Gartin, S. A., Boone, Jr., H. N., & Boone, D. A. (2006). Non-technical skills and traits needed to be career ready graduates as perceived by agribusiness employers and recruiters. *Proceedings of the American Association for Agricultural Education, Charlotte, North Carolina*, 539-551.
- Burnett, C., & Tucker, M. (2001). *Writing for agriculture: A new approach using tested ideas* (2nd ed.). Dubuque, Iowa: Kendall/Hunt Publishing Company.
- Business Roundtable: About us. (n.d.). Retrieved January 21, 2008, from <http://www.businessroundtable.org/aboutUs/members.aspx>
- Dillman, D. A. (2007). *Mail and internet surveys: The tailored design method* (2nd ed.) [2007 update with Internet, visual, and mixed-mode guide]. Hoboken, New Jersey: John Wiley & Sons, Inc.
- Flowers, J., & Reaves, R. (1991). Writing and learning skills—a good combination in agricultural education. *Agricultural education magazine*, 64(3), 9-10, 16.
- Garton, B. L., & Robinson, J. S. (2006). Tracking agricultural education graduates' career choice, job satisfaction, and employability skills. *Proceedings of the American Association for Agricultural Education, Charlotte, North Carolina*, 552-563.
- Gerson, S. M., & Gerson, S. J. (1994). Meeting corporate needs: How technical writing can prepare students for today's changing work place. *Journal of Technical Writing and Communication*, 24(2), 197- 206.
- Maciorowski, K. G., & Ricke, S. C. (2000). Improving content writing instruction in an undergraduate food bacteriology class. *Dairy, Food and Environmental Sanitation*, 20(3), 196-204.
- McDowell, G. R. (2002, October). Land-grant universities and extension into the 21st century: Renewing the covenant. Paper presented at the meeting of the Washington State University Cooperative Extension, Pullman, WA.
- McDowell, G. R. (2003). Engaged universities: Lessons for the land-grant universities and extension. *The ANNALS of the American Academy of Political and Social Science*, 585(1), 31-50.
- Muijs, D. (2004). *Doing quantitative research in education with SPSS*. Thousand Oaks, California: SAGE Publications Inc.
- National Association of Colleges and Employers. (2006). *Job Outlook 2006*. Bethlehem, PA: National Association of Colleges and Employers.

- National Association of Colleges and Employers. (2007, March 15). Employers cite communication skills, honesty/integrity as key for job candidates. Retrieved January 21, 2008, from <http://www.nacweb.org>.
- National Association of Colleges and Employers. (2007, December 5). "Perfect" job candidate pairs communication skills with strong work ethic. Retrieved January 21, 2008, from <http://www.nacweb.org>.
- [state university]. (2007). *[State university] 2007-2008 catalog*. Retrieved January 21, 2008, from [http://www.\[state\].edu/registrar/Catalogs/Catalog.html](http://www.[state].edu/registrar/Catalogs/Catalog.html).
- Orr, C. L. (1996). Communication across the curriculum in animal science. *Journal of Animal Science*, 74, 2828-2834.
- Scanlon, D. C., & Baxter, C. A. (1993). An examination of 'on-the-job' writing of recent college of agricultural sciences graduates. *Journal of Applied Communications*, 77(2), 1-11.
- Singh, S. P., Ekanem, E., Tegegne, F., Muhammad, S., & Comer, S. (2004). An evaluation of skills and attribute of agriculture/agribusiness graduates for biobased industry and economy. Paper presented at the meeting of the IAMA World Food and Agribusiness Symposium, Montreaux, Switzerland.
- Smith, E. L., & Bernhardt, S. A. (1997). *Writing at work: Professional writing skills for people on the job*. New York: McGraw Hill.
- Smith, L., Charnley, J., & McCall, W. (1993). Writing to learn in agriculture and natural resources courses. *NACTA Journal*, 37(2), 32-35.
- Stevens, B. (2005). What communication skills do employers want? Silicon Valley recruiters respond. *Journal of Employment Counseling*, 42(1), 2-9.
- Stewart, B. R. (1987). Teaching the basics in agriculture. *Agricultural education magazine*, 59(11), 11.
- The National Commission on Writing for America's Schools and Colleges. (2003, April). The neglected "R": The need for a writing revolution. Retrieved March 20, 2006, from http://www.writingcommission.org/prod_downloads/writingcom/neglectedr.pdf.
- The National Commission on Writing for America's Families, Schools, and Colleges. (2004, September). *Writing: A ticket to work ... or a ticket out: A survey of business leaders*. Retrieved March 20, 2006, from http://www.writingcommission.org/prod_downloads/writingcom/writing-ticket-to-work.pdf.

The National Commission on Writing for America's Families, Schools, and Colleges. (2005, July). Writing: A powerful message from state government. Retrieved March 20, 2006, from http://www.writingcommission.org/prod_downloads/writingcom/powerful-message-from-state.pdf.

The National Commission on Writing for America's Families, Schools, and Colleges. (2006, May). Writing and school reform. Retrieved January 21, 2008, from http://www.writingcommission.org/prod_downloads/writingcom/writing-school-reform-natl-comm-writing.pdf.

Tobey, D. M. (1979). Writing instruction in economics courses: Experimentation across disciplines. *Journal of the Northeastern Economics Council*, 8(2), 159-164.

Wellman, J.D., McMullen, J.Q., & Hirsch, G.N. (1990). Evaluation of a writing improvement program. *Journal of Forestry*, 88(11), 24-27.