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Abstract

This study was designed to describe the amount and kind of writing recent College of Agricultural Sciences baccalaureate degree graduates complete on-the job, their perceptions of the importance of on-the-job writing, and the graduates' level of satisfaction with their writing preparation at Penn State.

An Examination of "On-The-Job" Writing of Recent College of Agricultural Sciences Graduates

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This study was designed to describe the amount and kind of writing recent College of Agricultural Sciences baccalaureate degree graduates complete on the job, their perceptions of the importance of on-the-job writing, and the graduates' level of satisfaction with their writing preparation at Penn State. A questionnaire was mailed to 309 recent College of Agricultural Sciences alumni and 48.4% responded. The majority of respondents were white males (23-26 years old), worked in agriculture-related jobs in Pennsylvania, and earned between \$20,000 and \$29,999 a year.

Respondents wrote less than eight hours a week and wrote a variety of forms such as letters, memos, and reports to different audiences.

Respondents felt that the ability to write well was important, and in general, were satisfied with their undergraduate writing courses.

Introduction

Universities and high schools are continually modifying and updating their curricula by including writing that better prepares students for the world of work. This emphasis on the

importance of writing has caused colleges and universities across the country to introduce writing-across-the-curriculum programs. The underlying assumptions of such programs are (1) that writing is developmental and (2)

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the ability to write well is important in any discipline (Faigley & Miller, 1982). Riesenber, in a 1988 study, found that over half of the University of Idaho College of Agriculture graduates felt that both written and oral communications should receive more emphasis in the undergraduate program. Love, Lyons, Mortensen and Yoder (1989) found in a nationwide study that faculty in colleges of agriculture generally agreed that graduates need to be able to write more effectively.

However, few studies have addressed the question of how colleges and universities might begin to assess current programs or create new ones that respond to the writing needs of college graduates. Faigley, Miller, Meyer, and Witte (1981) suggested that before any college writing program can be considered effective, one must first know if what it teaches has value to the graduates who are now writing in their chosen profession.

Related Literature

Bataille (1982), after studying graduates of Iowa State University, found that 64 of every 100 working days are devoted to writing for at least one hour per day. Cox (1976) found that supervisors estimated they spend, on the average, 25% of their month writing. Other studies tended to support the concept that college educated

workers spend about 20% of their time writing (Barnum & Fischer, 1984; Harwood, 1982; Faigley et al. 1981; Anderson, 1985). However, despite the large number of studies that deal with time spent writing, no single profile emerged that clearly defined the type of writing, or factors that influence the time spent writing by recent college graduates.

In addition, the few studies that examined types of written communication indicated that letters and memos are the forms of communication that workers write most frequently (Anderson, 1985; Bataille, 1982; Cox, 1976; Barnum & Fischer, 1984; Harwood, 1982). However, other studies suggest that some workers write short reports and prepare forms and instructions more often or almost as often as memos and letters (Flatley, 1982; Mikulecky & Diehl, 1980; Bataille, 1982). Only a limited number of studies inquired about readers.

In surveys relating to college-educated workers' opinions about their preparation for writing in their careers, many graduates considered writing courses to be an important part of the college curricula. As far back as 1960 Simonds reported that approximately 80% of upper level managers surveyed rated skill in writing as the most frequently used skill developed in college.

The literature suggested that college graduates write different

ways depending on their relationship to their readers, their perceptions of the importance of their writing, the amount of time spent writing, and the familiarity with the subject. Additionally, college graduates consider writing courses important to the curriculum and suggest that perhaps undergraduate writing courses preparing students for their careers need to address a wide range of skills.

Objectives

This study examines the writing of 1988, 1989, and 1990 baccalaureate degree graduates from the College of Agricultural Sciences at Pennsylvania State University. Specifically, this study describes, (1) the amount and kinds of writing the graduates do on the job, (2) the perceived importance of on-the-job writing to the graduates, and (3) the graduates' satisfaction regarding their college preparation for on-the-job writing.

Methodology

Based upon a review of literature, a questionnaire consisting of three sections was constructed. The first section contained questions and statements regarding writing on the job, (i.e., type of employment, amount of time spent writing, readers/audiences, kinds of writing, and importance of writing). The second section elicited data relative to the writing preparation that gradu-

ates received at Penn State. The last section contained statements and questions to gather demographic data.

After being reviewed by a panel of experts in the Department of Agricultural and Extension Education and the English Department at Penn State for content and face validity, the questionnaire was pilot tested. The revised questionnaire was then mailed to a stratified random sample of 309 graduates from a population of 1,011 graduates who received baccalaureate degrees from the College of Agricultural Sciences at Penn State from January 1988 through December 1990. The population was stratified based on the year the graduates received their degree. Usable data were obtained from 149 graduates. The 1990 graduates had the highest percentage of returns (52%), followed by 1988 (51%), and 1989 (46%). Nonrespondents tended to be similar to the respondents (Miller & Smith, 1983). A random sample of ten nonrespondents was drawn and telephoned to obtain the data requested on the questionnaire. These data were compared with the data received from respondents. Respondents and nonrespondents were not significantly different ($p < .05$) in terms of year of graduation, type of employment, amount of time spent writing, department from which they graduated, and age. All data were coded and pro-

cessed using the Statistical Package for Social Sciences (SPSS) at Penn State. Appropriate descriptive statistics including frequency distributions, means, and percentages were used.

Findings

The majority of respondents were white males, 23-26 years old who held agriculturally related positions in Pennsylvania, and earned between \$20,000-\$29,999 a year. Respondents represented 17 different majors in 12 departments within the College of Agricultural Sciences.

Over half of the respondents wrote less than eight hours in a

typical week and almost two-thirds of the respondents did not write frequently outside of their job. Data in Table 1 show graduates classified by type of employment and time spent writing in a typical week. Employment positions were classified according to the *Standard Occupational Classification Manual* (U.S. Department of Commerce, 1980). Graduates classified as natural scientists and mathematicians had the highest number of respondents who wrote eight hours or more in a typical week. This category includes jobs such as environmental scientist/specialists, food scientists, and geologists. Those graduates classified in agricultural, forestry, and fishing

Table 1: Time Respondents Spend Writing in a Typical Week by Type of Employment.

Hours/Week Writing	f	0-3	4-7	8-15	16+
Type of Employment	No. of respondents				
Executive, administrative & managerial occupations	13	3	7	1	2
Natural scientists, mathematicians	24	1	6	7	10
Technologists/technicians, except health	25	6	10	6	3
Marketing & sales occupations	21	8	8	3	2
Agricultural, forestry, fishing occupations	33	14	7	5	7
Students: graduate, law, veterinarian	12	2	6	3	1
Other	19	5	3	5	6
Total	147	39	47	30	31

occupations had the highest number of respondents who wrote less than eight hours in a typical week. The agriculture, forestry, and fishing occupations classification was made up primarily of production agriculture oriented positions.

Data in Table 2 suggest that graduates from the School of Forest Resources and the Department of Food Science had the highest number of respondents writing eight hours or more in a typical week.

Seven forms of written communication were used by at least 50% of the respondents: letters, memos, step-by-step instructions, formal reports, guidelines/ regulations, proposal for approval of projects, and results from experiments/trials/ studies. The six forms used

least by the respondents included articles for specialty magazines, professional journals or newspapers; documents used in insurance claims, appraisals or estimates; manuals; and brochures/ flyers.

Respondents were asked a series of questions regarding the kinds of readers to whom they write, their reasons for writing on the job, and how often their writing is read by readers with various levels of knowledge about their topic areas, i.e., readers who (a) know less about a topic than the graduate, (b) know about as much, (c) know more, and (d) are completely unfamiliar with the topic (Table 3). In addition respondents indicated how often they write for each of the four categories using the scale (1) never, (2) rarely, (3)

Table 2. Time Respondents Spend Writing in a Typical Week by Departments in the College of Agricultural Sciences.

Hours/Week Writing Department	f	No. of respondents			
		0-3	4-7	8-15	16+
Agricultural & Extension Education	22	6	6	5	5
Agricultural Economics & Rural Sociology	15	5	5	2	3
Dairy & Animal Science	15	5	7	2	1
Food Science	17	1	4	9	3
Forest Resources	36	9	11	4	12
Horticulture	13	2	3	4	4
Other	24	8	10	4	2
Total	142	36	46	30	30

sometimes, frequently/exclusively. Two categories of readers (those who know less about a topic and those who know about as much) received mean scores of 3.00 or higher on a 5.00 scale, indicating that respondents write for these readers at least "sometimes." The remaining two categories (those who know more and those completely unfamiliar) received ratings of 2.73 and 2.50, respectively, indicating the respondents write for these readers "rarely" or "sometimes."

Respondents also indicated how often their writing is read by people at three levels within their organization: those at (a) a higher level, (b) the same level as the graduates, and (c) a lower level. On a 5.00 scale of (1) never, (2) rarely, (3) sometimes, (4) often, and (5) frequently/exclusively, the mean scores

for writing people at a lower level to 3.5 for writing people at a higher level within the respondents' organizations. A mean score of 3.00 for "those at their own level" indicated that the respondents wrote to people at their own level "sometimes."

A series of questions asked graduates how often they write to customers/clients, vendors, the general public and students. Respondents wrote for customers/clients "sometimes," and "rarely" for government and the general public; the majority "never" or "rarely" ever wrote to vendors and students. When respondents were asked how important the ability to write well was for someone in their position, over three-fourths (118) indicated that the ability to write well was either "important" or "very important." Respondents in all

Table 3. Mean Scores by Respondents on How Frequently Their Writing Is Read by Readers with Various Levels of Knowledge About Their Topic Areas.

Readers	f	Mean*	SD
I write for readers who know less than I do about a topic.	145	3.36	1.11
I write for readers who know about as much as I do about a topic.	146	3.28	1.00
I write for readers who know more about a topic than I do.	145	2.73	1.04
I write for readers who are completely unfamiliar with a topic.	145	2.50	1.09

* Means based on scale of 1=never to 5=frequently/exclusively.

Scanlon and Baxter: An Examination of "On-The-Job" Writing of Recent College of Agric job categories except the "students" category ranked the importance of writing in their positions as "important" or "very important." Mean scores ranged from 2.25 for "students" to 3.58 for natural scientists/mathematicians.

When asked how important the ability to write well is to career advancement, over 86% (129) of the graduates indicated it was either important or very important. Respondents in all job categories gave ratings 3.00 or higher, suggesting that the ability to write well was important for career advancement. Mean scores ranged from 3.03 for agricultural, forestry, fishing occupations to 3.54 for natural scientists/mathematicians. All departments in the College of Agricultural Sciences from which respondents graduated had mean scores at 2.96 or higher,

indicating the ability to write well was important for career advancement.

Respondents were asked questions involving the amount of writing in courses, their satisfaction with selected courses, and the importance of selected courses in preparing them for their present position. Over half of the respondents indicated that courses in majors should contain frequent writing assignments. However, a majority of graduates indicated that both elective (n=109) and general studies courses (n=103) should only contain occasional writing assignments. Fifty-six percent of the graduates indicated that required English courses should contain several major writing assignments.

Data show that graduates were satisfied with their writing

Table 4. Mean Scores by Respondents on Their Satisfaction of Undergraduate Writing Courses.

Course	#	Mean*	SD
ENGL 004, Basic writing skills	35	3.06	0.72
ENGL 005, Writing tutorial	21	3.14	0.96
ENGL 015, Rhetoric and composition	125	3.01	0.70
ENGL 201/202A, Writing in the social sciences	19	3.42	0.84
ENGL 211/202B, Writing in the humanities	5	3.40	1.52
ENGL 218/202C, Technical writing	80	3.14	0.84
ENGL 219/202D, Business writing	52	3.40	0.69
ENGL 416, Science writing	6	4.00	1.10
ENGL 418, Advanced technical writing and editing	11	3.36	1.29

* Means based on scale of 1=very dissatisfied to 4=very satisfied.

courses (Table 4). Overall communication ratings ranged from 3.01 to 4.00. When asked to indicate which of the courses listed in Table 4 were most important in preparing them for their present position, none of the courses were selected as "most important" by the graduates. ENGL 218/202C was the only course that had over 40% (n=61) rank it important in preparing them for work.

Graduates were asked to respond to three open-ended questions involving their classes and activities while at Penn State. College of Agricultural Sciences courses in animal science, horticulture, agricultural education, forestry, wildlife, agricultural economics, rural sociology, agricultural engineering, environmental resource management, and food science were all listed as courses that helped develop their writing.

Graduates listed courses in general education, including humanities, history, marketing, business administration, women's studies, landscape architecture, English, and communications, as courses outside of the College of Agricultural Sciences that helped develop their writing.

When asked about extracurricular activities that helped develop writing skills while obtaining their baccalaureate degree from Penn State, 32 respondents listed activities within the College of Agricultural Sciences. Activities within the Dairy Science Club were men-

tioned most frequently, followed by the Hort Club and Block and Bridle Club. Other activities mentioned were the Ag Student Council, Collegiate FFA, Collegiate 4-H, and several other general kinds of activities. These frequencies tended to parallel the number of respondents from corresponding departments.

In general, graduates believed that writing was important even if they did not write often in their current position. Several graduates mentioned the importance of correct spelling and proper grammar.

Discussion

The patterns that emerge from data related to the first objective indicate that the majority of graduates write very little in their current position. This outcome implies that the majority of graduates do not hold positions that require intensive writing skills but rather place more emphasis on other forms of communication. Comments from the respondents on the open-ended questions support this conclusion: "Along with written communication, there is a need to stress [an] oral communication curriculum as well. I think the speaking skills I polished at Penn State are even more important in my day-to-day life than my ability to put my words on paper." Cox (1976) found that the business graduates of selected institutions spent 29% of their working

month listening, 26% speaking, 25% writing, and 20% reading. Cox also found the higher the position held in the organization, the more writing the graduate did. Huegli and Tschirgi (1974) reported that new employees indicated they used written communication less frequently than oral communication. They concluded that new employees avoid using written communication because they are not effective in using it.

The data that dealt with the kinds of readers and forms of written communication show that graduates are writing primarily informational items for those who know less or for those who know about as much as they do about a particular topic. One might conclude that graduates are probably writing to those who know less, giving instructions or advice on a particular technique or topic, and to those who know about as much, informing them of some aspect of their job. One graduate wrote, "I'm at an early level position and my duties are in the field 95% of the time. I really only get to write letters to answer questions and send information or correspondence. This is all the writing I do at this point in my career." The findings writing frequency—letters (85%), memos (72.3%), and step-by-step instructions (67%)—would support this conclusion.

New employees tend to report to supervisors, thus creating a need for information to flow in

an upward direction. Respondents wrote to people at higher levels within their organizations and those at their own level more frequently than to people at a lower level.

The data related to the second objective suggest that respondents in general perceive the writing they complete on the job is "important" or "very important" in their careers. The "students" category ranked the ability to write well in their position as "unimportant." The variation of the kinds of students (i.e., graduate, law, veterinarian), suggests that the graduates are focusing on oral communications or did not interpret the question the same as those in full-time employment. All respondents indicated that the ability to write well is important to career advancement.

The pattern that emerges from the findings related to the third objective show the graduates are more satisfied with specific courses (i.e. technical writing) than very general courses (i.e. rhetoric and composition). Although the graduates in general were satisfied with all of their writing courses, they did not indicate that any of the courses were critical in preparing them for their position. Only 40% of the respondents suggested that the technical writing courses were important in preparing them for their position. Respondents listed a wide variety of classes that helped develop their writing, indicating

what the writing students do in other courses may be as vital to their education as the required English courses.

Recommendations

Based on the literature review and data presented, the following recommendations were developed:

1) Courses offered in the College of Agricultural Sciences should emphasize writing's importance in a student's career by expanding writing activities and instruction in content area courses. Graduates encounter a variety of written forms in the workplace, especially letters, memos, and reports. Every attempt should be made to use a variety of writing forms to fulfill specific course objectives.

2) Courses offered in the College of Agricultural Sciences should provide students with opportunities to write for a variety of audiences and purposes. Writing on the job requires graduates to develop their skills in terms of different audiences, whereas most in-class writing is directed to one audience, the instructor. Emphasis on a variety of audiences and purposes will give future graduates crucial practice in writing for these groups.

3) Advisors in the colleges of agricultural sciences should recognize that writing is a developmental skill that requires specific instruction and guided practice. Advisors should be

cognizant of which courses in the college enhance and promote basic writing skills, and recommend them to their advisees.

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