

3. Colleges of agriculture should continue to offer and promote the unique marketable characteristics of their degree programs.

4. Colleges of agriculture need to be sensitive to changing labor market conditions for their graduates.

In this period of declining enrollments, colleges of agriculture must critically assess their performance in marketing both their degree programs and their graduates (Dehne; Topor). The task of recruiting students and advising them on career related choices requires a clear understanding of the labor market for college of agriculture graduates. Without reliable information on labor market supply and demand conditions, colleges of agriculture may soon join the ranks of other colleges who recruit and educate students who cannot find jobs in their chosen fields.

REFERENCES

Adrian, John, Lowell Wilson and Howard Clonts. "Characteristics and Status of Graduates of Department of Agricultural Economics and Rural Sociology-Auburn University: 1939-81." Dept. of Agr. Econ and Rural Soc., Auburn Univ. Dept. Series No. 12, December 1983.

Bachtel, Douglas and Richard Rohs. "Student Survey" Unpublished report, College of Agriculture, University of Georgia, 1985.

Brewer, Thomas A. "Career-Conscious Students Look at Agribusiness." *Idaho Economics* Dept. of Agr. Economics, Univ. of Idaho, July 1984, No.1.

Border, Josef M. and Rodney P. Deprey. "Characteristics and Analysis of Agricultural Economics Alumni from the University of Georgia 1970-81." *AEC Faculty Series* Div. of Agr. Econ. Univ. of Georgia, FS83-1, June 1983.

Coulter, Kyle J. and Marge Stanton, editors, *Graduates of Higher Education in Food and Agricultural Sciences*. U.S. Dept. of Agr., Science. U.S. Dept. of Agr., Science and Ed. Adm., July 1980.

Dunkelberger, John E., et. al. "Higher Education in Agriculture: Students at Southern Land Grant Universities" *Southern Cooperative Series Bulletin No. 270*. Alabama Agr. Exp. Station, Auburn Univ., July 1982.

Dehne, George C. "Admissions Needs You" *Currents* March 1985, pp 28-32.

Kmenta, Jan. *Elements of Econometrics*. New York: Macmillan Company, 1971.

Nippo, Murn M. "Ag Alumni Survey Depicts Undergraduate Educational Needs." *NACTA Journal* 27-2 (1983):13-16.

Pass, Bobby C. "Curriculum Committee Report" Unpublished manuscript, College of Agriculture Curriculum Committee, Univ. of Kentucky, March 1985.

RICOP, "Fall 1984 Enrollment Report-National Association of State Universities and Land Grant Colleges" *NACTA Journal* 29-1:1985):6-13.

Thatch, Daymon. "Labor Market Trends, Enrollments and Curriculum Changes in Environmental and Business Economics Programs at Cook College, Rutgers, 1983." New Jersey Agr. Exp. Station Pub. No. J-02001-1-83.

Topor, Robert S. *Marketing Higher Education: A Practical Guide* Alexandria, Va.; Case Publications, 1984.

Woods, Harvey S. "Marketability of Illinois Agriculture College Graduates" *NACTA Journal* 21-2 (1977):10-13.

THE WHYS AND HOWS

Incorporating Writing in Agricultural Courses

David W. Cobia

The single factor that hinders performance of our graduates on the job more than any other is the inability to communicate (1, 4, 8, 14). This deficiency is not confined to agriculture students but seems to be fairly general regardless of discipline or geographic region. Overcoming this weakness would do more than any other factor to enhance the job performance, promotion, and satisfaction of our graduates. Blame has been placed on TV, teachers that don't teach, standards that are kept or are not even in place, lack of parental support or no parents, and university English courses that teach only literature.

We can place the blame elsewhere, wring our hands, and return to regular lectures and multiple-guess exams. But maybe we should get directly involved in improving writing skills. The response usually is: "No way! Are you crazy? I don't have enough time as it is in the classroom, and I sure don't have time to grade all that stuff. Besides, what business do I have teaching writing skills? I can't write myself. I can't recognize poor mechanics let alone teach someone else

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to write properly. I'm not trained in writing; it's not my job."

These fears, even if unspoken, are real. The reasoning appears to be sound — but it isn't. Output is increased most efficiently by increasing the most limiting resource. In the case of our graduates this limiting resource appears to be the ability to communicate. Something can be done. Students can graduate with enhanced communication skills they need to succeed in today's professional environment.

Many instructors have a nagging feeling that they should be doing something more positive about writing in their courses but they feel ill-equipped, frustrated, and out-of-place in thinking about what could be done.

Participation in a Prairie Writers Project Workshop, organized by Keith Tandy at Moorhead State University, has given me the courage and concepts to more than muddle along. What follows is a condensation of information obtained from this workshop together with my own experience.

The potential for success exists with proper attitude, classroom atmosphere, assignments, and evaluation to improve writing skills. With these elements in place, subject matter comprehension and even enjoyment of writing will be enhanced in addition to improved writing skills. Furthermore, you as an

instructor can be on your way home by 5:00. In a word, synergism.

Synergistics and Attitude

We cannot, in good conscience, leave writing entirely to composition courses. First, writing means different things to different disciplines. Nurses have their logs, chemists have their lab reports, and economists their research reports. Students need to develop writing proficiency in their own discipline's language, intellectual constructs, and written instruments. Secondly, students will begin to take writing seriously when their instructors do and when they see the need for writing arising from requirements of their chosen fields.

Another profound and compelling reason for incorporating writing in our courses is that it enhances the learning process rather than detracts from time devoted to subject matter. Students "should be learning to write but they should also be writing to learn" (11). Writing ". . . possesses a cluster of attributes that correspond to powerful learning strategies... (and)... involves the fullest possible functioning of the brain" (2). Why? Because thoughts must be organized, hands must form the words, and eyes observe what has been recorded. Thus, Bruner argues, the three ways of dealing with reality (doing, depicting an image, and restatement in words or symbols) are dealt with simultaneously (2). This enhances the likelihood of emotion being woven into the experience and makes learning more intense and indelible. Writing incorporates critical learning strategies of reinforcement, feedback, an active and engaged mind, and personal involvement. It is self-rhythmed (2). Writing provides a "unique form of feedback, as well as reinforcement,... because information from the process is immediately and visibly available as that portion of the product already written" (2). A critical and efficient component of learning is organizing concepts in your own words (2, 15). Emig also argues that the process of writing not only enhances learning but also extends the learning process (both synthesis and analysis) beyond what is otherwise possible.

Two additional concepts should be woven into an attitude toward writing — the creation of assignments and the evaluation of writing. First, what is the situation when a person writes to another? I, an expert on what I am about to write, am writing to **you** about **it** in a language with which I am at home. But what are we requiring students to do? We are requiring them to write on a topic they know very little about in what amounts to a foreign tongue to an acknowledged expert. A very tricky assignment at best!

Second, we need to view errors as a useful means of improving, not as something to be avoided. "Writing as error-avoidance freezes and misdirects people" (6). When students screen out words for fear of misspelling them or fail to use unfamiliar grammatical structures, creativity is stifled and feedback is blocked.

Atmospherics

Classroom atmosphere is a major contributing factor in writing because writing is such a creative and sometimes threatening experience. Students cannot be creative if they feel socially isolated in a frigid sea of strangers with shoulders turned in and eyes fixed to the floor or furtively darting around the room to see if others are as cold. If students feel that class is a fun and supportive environment where they can try their wings, any failure will be a soft landing. Their intellectual capacity will be challenged but not ridiculed.

Several techniques can be used to create a desirable classroom atmosphere. Some smack of parlor icebreaker games, while other provide useful classroom data. The appropriate technique depends on the instructor, class organization and size, and subsequent activities. The following two techniques have worked for me. The name exchange is adaptable to large and small classes. In this situation the instructor requests students to find four other students they do not know and then exchange and record in the four sections of twice-folded paper, answers to such questions as name, address, phone, home town, and favorite musical group. The class is a pandemonium. Students not only enjoy this exercise, they also have someone to call to check on an assignment (or to date) and someone from whom they can borrow notes. Another technique for small classes is to have students sit in a circle. Each person introduces himself/herself and then repeats the names of all those previously introduced. Repeat trips around the circle can be used to give additional information, such as a success they are proud of and why. This has been very effective in a graduate case methods class where considerable student interaction is vital.

Assignments

If students aim at nothing, they are sure to hit it. They often fail because we fail to let them know what their objective is. The assignment itself sets the stage for a creative, exploring, mind-expanding, learning, and enjoyable (or at least satisfying) experience.

There are several types of assignments — journals, logs, summaries, abstracts, study guides, prewriting, sprint writing, and term papers. Descriptions of how these assignments can be used are given in selected references (see 3, 16 for journals). Important dimensions to any assignment include:

1. **Audience** — Knowing the audience gives purpose, sets tone, focuses attention, and most importantly stimulates invention. An audience, such as a friend, parent, fellow student, client, politician, or the general public, where the student can serve as an expert works wonders over the implied audience of the instructor.

2. **Purpose or objective** — There are three parts or questions to the purpose. First, what are they to learn? Are they to discover new knowledge or new relationships, collect information for class, demonstrate that they have read the material, or take a

position? Second, what is the topic? It should be narrow if you want to control direction or broad if you want students to wrestle with scope. The purpose of the assignment could be in the form of a question incorporating one or more of the what, where, when, how, and why sequence, such as *Why did it happen?* or *How was it organized?* Third, to round out the purpose, students also need to know why they are writing. Are they writing to get things done, to influence, to persuade, to answer a complaint, or to inform?

3. **Length** — More half-page assignments are needed. They are easy on the instructor and students get more feedback quicker. Rawlins argues that, "after the first page, all significant writing decisions have been made . . . so let him stop, give him . . . feedback and direction, and let him write again" (13).

4. **Frequency** — Increase it. "Writing is a skill . . . one only learns by doing it a lot, with commitment" (13).

5. **Preliminaries** — Too often instructors drive students to despair by requiring them to, in a way, walk onto the stage in Radio City and play a polished piano piece without letting them practice or explore different expressions in front of noncritical audiences. Let (or require) students to hand in early drafts from which they can receive initial feedback from you or fellow students.

6. **Where is information to be obtained** — Does information come from the library, an interview, the text, a laboratory observation, or a set of readings?

7. **Activities required for the written material** — Instructions to abstract, summarize, interpret, evaluate, synthesize, analyze, or compare are far better than "Write a report on _____."

8. **Due dates** — Students need to know when various stages of writing are due.

9. **Materials and format** — What is desired in the way of page layout and type of paper? Also is typed or handwritten, and pen or pencil acceptable.

10. **Grading** — Feelings on grading vary. Some instructors feel that writing quality is multiplicative; others grade only on content; and others just give a "+" or a "-". Students deserve to know what par is before the course is played.

With these ten dimensions the student can hit the ground running. We will sometimes be amazed at the results.

Evaluation

Now to face the violent fear and awesome burden of responding to student writing. Most writing assignments create mountains of paper for which students are thirsting for some kind of feedback. How do we handle these two overwhelming and discouraging dimensions: quantity of reading and quality of feedback?

The quantitative issue first. You do not have to and perhaps should not read all of a student's writing any more than a coach observes and personally

comments on each deep knee bend of each team member or runs every step in the training of every marathon runner. The final performance, yes. Not reading all of their work doesn't seem to detract from the quality or quantity. Another evaluation strategy comes from elementary school. Students exchange papers or better yet read their work out loud to three or four classmates for their comments. Most of us can critique a colleague's paper much easier than our own. Can't this also be true of students, especially when they've been given a little direction? Students can then rewrite their papers, and you will receive a much more polished report.

A quote from Samuel Johnson gives courage to face the qualitative issue: "Sir, I do not have to be a carpenter to see that the table is wobbly" (11). We know when an idea is not coming through or we are confused about the antecedent of a pronoun, when we feel like we are being jerked from one unrelated topic to another, or when it just sounds funny. We may not know how to name the error or how to correct the problem. We don't have to know, but we should react. All we really have to know is whether the idea is crystal clear or foggy.

Bill Lyons suggests that students can ask three questions of the instructor or fellow class members: 1) "What do you like about my paper?", 2) "What questions do you have about my paper?", and 3) "What kinds of polishing do you feel my paper needs?" This approach is what he calls the "PQP" or the "Praise, Question, Polish" method of responding to a student's writing. Answers to the first question must come first. They identify redeeming virtues (all papers have some), strengthen egos, and usually create a receptive environment for what follows. The evaluator is on the student's side. Answers to the first question give the evaluator license to proceed. Questions about the paper cause the writer to ponder whether the writing was complete, logical, specific, and clear. Only after the first two questions are answered should the evaluator move to the third. And then the emphasis is on polishing or suggestions on mechanics.

Too often we wade in with 13 red pencils leaving blood all over the page. Jack Rawlins argues that the red pencil route should be avoided because it chews up vast amounts of time in mindless, unrewarding, assembly-line stuff that would burn you out and cause you to hate your job. Students don't learn from "having their errors paraded in front of them." This destroys his work and your teacher/student relationship (13). By focusing on what is wrong we do not encourage students to take risks; instead we punish them for it, and they take an error-avoidance posture.

This isn't to say we should be soft. We must deal firmly with poor thinking and writing, yet make positive and direct comments. Short marginal or ending comments could include remarks such as "What is the topic sentence of this paragraph"; "Say it plain",

"This is a good first draft, now clean up the mechanical errors"; "What is meant here"; "Who does this pronoun refer to"; "You need extra help with transitions" (paraphrased from 12).

A short cut to all of this is to use straight horizontal or vertical lines to mark good passages and wavy lines for sections that require additional work.

Summary

There are three major fears that we have of incorporating more writing in our courses. One, it will detract from subject matter content by taking time away from an already cramped schedule. Two, it takes skill that I don't have to evaluate writing. And three, it takes time that I don't have. These barriers are really a figment of our imaginations. Students learn better if they write; you can tell the difference between good and poor writing, and there are efficient ways of getting feedback to students.

Initially it will take effort to incorporate meaningful writing assignments and to design grading and evaluating techniques that will provide helpful feedback to students. Change takes effort. But isn't it a question of priorities? We owe it to our students and profession to enhance student communication skills.

References

1. Career Development and Placement Center, The Penn State University. "How Recruiters Screen and Select Students." *Journal of College Placement*, Summer, 1981, p. 45.
2. Emig, Janet. "Writing as a Mode of Learning." *College Composition and Communication*, May 1977, p. 122-28.
3. Fulwiler, Toby E. "Journal Writing Across the Curriculum." *Ungraded Writing*, p. 15.
4. Hafer, J.C. and C.C. Hath. "Job Selection Attributes: Employer Preferences vs. Student Perceptions." *Journal of College Placement*, Winter, 1981.
5. Lams, Victor. *How to Use Writing to Boost Learning Across the Discipline*. Chico: California State University, Summer, 1982.
6. Lams, Victor. "Be a Good Reader: Evaluating and Responding to Student Writing." *How to Increase Literacy Without Becoming an English Teacher*, ed. Murray F. Marland, p. 9. Chico: California State University, University Foundation, 1981.
7. Lyons, Bill. "The PQP Method of Responding to Writing." *The English Journal*. March 1981, p. 42.
8. Magill, Becky. "Communication Skills Top Employers' Wanted Lists." *Spectrum*, North Dakota State University, May 14, 1982, p. 1.
9. Markland, Murray F. "Aiming the Student Writer: The Assignment as Starter," *How to Increase Literacy Without Becoming an English Teacher*, ed. Murray F. Marland, p. 9. Chico: California State University, University Foundation, 1981.
10. Moskowitz, Breyne Arlene. "The Acquisition of Language." *Scientific American*, November 1978, p. 102.
11. Prairie Writing Project. "Some Ways to Use Your Responses to Student Writing." Moorhead, Minn: Moorhead State University.
12. Rawlins, Jack P. "Four Secrets: Improving Writing Through Marginal Comments." *How to Increase Literacy Without Becoming an English Teacher*, ed. Murray F. Marland, p. 16-20. Chico: California State University, University Foundation, 1981.
13. Rawlins, Jack P. "Some Beginning Questions and Answers." *How to Increase Literacy Without Becoming an English Teacher*, ed. Murray F. Marland, p. 5-8. Chico: California State University, University Foundation, 1981.
14. Rocky Mountain College Placement Association. "Employers Cite Shortcomings." *Diggins*, Winter 1982.
15. Staton, Thomas F. *How to Study*, 6th ed. Montgomery, Ala. How to Study, Box 6133.
16. Zimmerman, Jan. E. "Journals: Diaries for Growth." *Synergist*. Fall 1981, p. 46.

New Format

Farm Equipment Operations Course

James W. Rumsey

Introduction

As more of our university agricultural students come to us with a lack of on-farm experience or background, the need for hands-on courses in agricultural practices has become increasingly important (Mortensen, 1981; Mayer, 1980; Vorst, 1979). The ability to learn farm equipment operation unquestionably has positive benefit to agricultural students with little or no farm experience. This paper will address the author's experience in developing a farm equipment operations course. Specific attention will be given to the objectives of the course, course format and content, course facilities and equipment, student comments and responses to the course and currently planned new developments for the course. In keeping with an educational philosophy of preparing students for management and decision-making, the course was expanded in an attempt to expose students to facets of day-to-day management of farm machinery. Through a combination of in-field lectures and field laboratory exercises, the course has also been expanded to include farm machinery operation, components, types, set-up, field adjustment, uses, maintenance and troubleshooting.

Background

The agricultural practices courses were begun on the U.C. Davis campus nearly 35 years ago. Throughout the years the field equipment operation course has been taught during the fall and spring and the field equipment maintenance course has been taught during the winter months. The still existing farm shop and tractor storage sheds were built by the first classes of students. Facilities also include 38 acres of ground that is exclusively used for the course. The soils are a Yolo loam and a Reiff loam. Both soils are mapped as Class I soils and both have a Storie Index of 98.

We currently have 7-row crop wheel tractors and 2 crawler tractors. In addition, we have a mounted, 3-Rumsey is an assistant professor in the Agricultural Engineering Department, University of California, Davis, CA 95616.