

Communication Literacy Across the Sciences: Designing and Evaluating Writing Assignments

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In the past five years, writing in the disciplines programs has become more prevalent at colleges and universities across the United States. While many people easily see the benefits of writing in humanities and liberal arts courses, the practice has not been readily applied in the sciences, especially the agricultural sciences. Yet it is our belief that requiring students of the sciences, including animal agriculture, to write as a normal part of their curricular course work benefits students on several levels. In our presentation today, we offer practical advice based on our experience in integrating writing components into the curriculum of the Animal Science Department at University of Nebraska-Lincoln's College of Agricultural Sciences and Natural Resources. Our primary focus is to help instructors develop writing assignments, present them effectively to students, and evaluate them both efficiently and helpfully.

Rationale for Including Writing in Animal Agriculture Courses

There are two areas of justification for including a writing component in any animal agriculture course: the practical and the pedagogical. From a practical standpoint, students need to know how to communicate effectively in the professions for which we are preparing them. From a pedagogical standpoint, giving students the opportunities to articulate knowledge through writing is just good teaching practice.

Practical Arguments

In only the short span of the last ten years, the field of animal agriculture has grown larger and more diverse; con-

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sequently it has become more demanding that its practitioners communicate effectively, on many levels and with increasingly complex audiences. Communication takes place in the workplace, in the marketplace, in legislative chambers and in the press. Animal agriculture professionals must communicate with each other, with consumers and clients, with political entities and with advocates and adversaries.

As educators of those who will inherit the burden of carrying on the communication the industry demands, we have an obligation to prepare them, not only as technical experts in animal agriculture, but as competent professional writers and speakers. It is misleading and unfair for students to complete a four-year course in a professional field without once being required to practice writing skills outside of a composition or technical writing class. We serve our students well when we create contexts in the classroom that simulate situations they are likely to encounter on the job — and writing (as much as many professionals would like it not to be so) is an integral part of the kinds of jobs we are preparing students for.

Pedagogical Arguments

The ultimate objective of teaching is to help students make connections between “old” and “new” knowledge. As teachers, we hope our students carry out of the classroom with them the capacity to continue to process new information in light of the old as their experience expands. Our challenge is to help students bring to bear on their education all the tools at their disposal. That means relying on as many modes of learning as possible, to enable students to think about what they are learning and to articulate what they know. Writing is without doubt the most effective mode of rediscovery and articulation. When we encourage students to actively engage in writing, we make their learning experience richer and more diverse. Asking students to write is asking them to think, to make connections, to use the materials of their experience to make meaning.

Writing is indeed one of the most powerful pedagogical tools available, but one that is seldom used, for a variety of reasons, most of which have to do with the teacher's limitations, not the student's. But the lament “Writing belongs to English Departments” has grown noticeably weaker as more teachers across all disciplines see the value of asking students to use writing as a mode of learning and a way of making meaning.

Methods for Developing Writing Assignments

Developing a writing assignment requires the teacher to do two basic things: determine the assignment's purpose and create a context within which students will write.

Determining the Objectives of a Writing Assignment

The key to making successful and effective use of writing in a discipline-specific course is to first of all determine why you want students to write and how writing can contribute to the educational objectives of your course. Writing may serve any number of purposes:

- to simply give students the opportunity to practice writing
- to help students learn subject matter
- to allow students to articulate what they have learned
- to allow teachers to assess how well students synthesize and evaluate what they are learning
- to give students practice with the types of professional writing required in their careers.

A vague purpose (like wanting students to write because some English teacher said it would be a good idea for them to do so) leads to vague writing, difficulties in evaluating writing, unhappy students and a frustrated professor. The more specific your purpose and the clearer you express it, to both your students and yourself, the more effective the students' writing will be.

You may accomplish a number of objectives with a single writing assignment — but *you* must be sure why you have assigned a writing project before you ask students to carry it out. A clear objective enables you to select an appropriate form for the students to use when writing, helps you identify an audience for student writers to address, and makes your task of evaluating the writing less difficult because you can assess it based on how well it meets the stated objectives. In addition, a clear objective can help you deal with the common student lament: "I don't know what you want."

Creating a Context for Writing

Once you have determined the objective of the writing assignment, you next must create a reasonable context within which students can write. This means identifying both an appropriate form and a logical audience for the writing. To create a context, think about the educational objective you hope to achieve and the kinds of writing people in your profession usually produce.

Whatever your objective, students benefit if you create the kind of writing context that they may reasonably encounter in their professional careers. A general assignment like "Write a 1,000-word paper on the use of starches in processed meats" gives the student little coherent direction and offers few clues about the kind of on-the-job writing they may be expected to do in the future.

A good assignment should have a descriptive name that refers to the written product of the assignment by type (e.g., informational flyer on the use of starches in processed

meats) — not the generic "paper," and should let students know what your purpose is in asking them to write the document (e.g., "I want to find out whether you can identify the primary uses of starches in processed meats and how well you can express that information in non-technical language.") The assignment also should identify:

- the audience for the written text (consumers of processed meats)
- the purpose of the text (which will be different from the purpose of the assignment. Identifying the purpose of the text helps the student writer understand the reader's reason for reading and/or the way in which the writing should affect the reader's actions. *In this example, the writer's purpose is to help consumers understand why starches are added to processed meats and to instill more confidence in the product*)
- the writer's role (public relations officer for a company that manufactures processed meat products)
- the specific conventions you expect student writers to follow (regarding format, style, document design, length, etc.).

While specific direction can be invaluable, it's also important to leave room for imagination and creativity so students can use their own resources to pull together subject matter knowledge gained from class lectures and activities, course reading and related research.

As you assign a writing project, also encourage students to follow the standard stages of the writing process in developing the document. Encourage planning activities (brainstorming, listing, making idea trees, locating information sources, creating a note file, outlining), drafting (perhaps by requiring a preliminary draft to be turned in before the assignment's final due date), reviewing (by encouraging students to exchange drafts and give feedback to each other), and revising (by asking to see all versions of a document when the final draft comes in). It helps also if you model writing for students by talking about your own writing process and discussing current writing projects you yourself are engaged in.

Evaluating Student Writing

This area seems to be the most challenging for instructors outside of the humanities. Some instructors are concerned that they may not be able to give useful feedback to students about how to improve their writing; others believe that evaluating student writing will take too much time. In our experience working with instructors who have used writing in their courses for the first time, both concerns are easy to alleviate.

The first "trick" is to understand that as an instructor you aren't required to teach writing. So you don't have to be able to cite chapter and verse about misplaced modifiers and dangling participles and misused semi-colons. All you need to do is rely on your own instincts about the difference between effective writing and ineffective writing. If a student has not expressed herself clearly, or a preponderance of grammatical errors interferes with her explanation of a concept, or poor organization keeps you from following the logic of her argument, your assessment should reflect those

difficulties, but you don't have to edit the paper to correct the errors. You merely need to point out the problem areas or direct the student to the school's writing lab or other resources.

Evaluating student writing becomes much easier when you have prepared the writing assignment carefully. When you establish a clear set of objectives, you automatically create criteria for evaluating the finished product. The standards you use for measuring the writing against the criteria emerge as you talk to students about your expectations for their writing. If you expect writing to be grammatically correct and stylistically sound, make it clear. And let those things count in your evaluation. A list of criteria can easily be converted into a scoring sheet which the instructor can quickly mark and return to the student.

Another advantage to using uniform categories for responding to student writing is the consistency of terminology it establishes. Students quickly become familiar with the language you use to talk about writing, making the process of communicating about communication easier and more productive. The most practical advantage of using a uniform scoring sheet, however, is the time it saves you in assessing a number of student papers.

Discussion

D. Brink: What we would like to do now is give an assignment. For 15 minutes, we need to pretend that we are in a classroom and you are the class. We'd like you to form groups of four, if you would, please. Form groups with someone around you.

This is really a two-fold assignment. First, as a group, write a definition of *myofibrillar protein* on one side of your card. After you have written the definition, think about what the students would think of this assignment, what questions students might have about this assignment. Write those questions down on the back of the card. You have five minutes.

Brink: OK, we are going to call time. Pens down. Is there a group that would like to volunteer to read their definition?

Unknown: We came up with myofibrillar protein—protein in muscle, arranged in a fibrillar structure and responsible for muscle contraction.

J. Regenstein: Myofibrillar proteins are those proteins involved in contraction or regulation of contraction. Operationally it is defined, (or I would say misdefined, but we will argue that separately), as those proteins soluble in high salt defined as 0.5 M to 0.6 M NaCl or KCl unbuffered, (which is also wrong).

J. Greathouse: Myofibrillar protein is a protein that comprises the structural subunit of a muscle fiber that is responsible for muscle contraction and configuration.

J. Harris: Myofibrillar protein is a major component of contractile filaments of muscle.

P. Berg: We defined myofibrillar protein as those amino acids (protein sequences) which make up the contractile component of a muscle cell; they may also be thought of as proteins that make up the thick and thin filaments.

C. Carpenter: A protein which forms a physical component of the contractile mechanisms of muscles.

Conclusion

We strongly believe in the educational value of incorporating writing and other communication activities into courses in all disciplines. Although it is a challenge for faculty to include writing components in their courses, and it may take a while to find the right writing project for a particular course, the effort expended pays off in the long run.

Even though students may not readily recognize the benefits of writing as they are engaged in a writing project, writing makes them think critically and creatively about what they are learning. It also lets them practice a skill they need to have in order to succeed in their professional careers. Students in UNL's Animal Science Department have responded in a variety of ways to writing in their major courses. Some, as would be expected, complain that writing should only be done in an English course. But an increasing number are responding thoughtfully and positively to their writing — actually pleased and appreciative of their instructors' efforts to make learning a diverse and challenging experience.

J. Price: This is the Kotula definition: Proteins composing the muscle fiber, often referred to as contractile proteins because of their essential function in muscle contraction. These proteins are of importance to the meat industry because of their salt solubility and binding properties.

F. Rascon-Banda: Myofibrillar protein is the most basic structure of muscle. These proteins provide the contractile component of muscle and are filamentous or globular in nature.

Brink: One of the things that we are going to discuss is evaluating writing assignments. The evaluation or assessment of your definitions is going to be based on how well Liz, who is unfamiliar with meat science, can now define myofibrillar protein.

L. Bansett: My first thought is that I'm not sure how to define "protein" but that is an operative term in all the definitions. I think myofibrillar protein is a part of the muscle that makes it contract. That's probably not a complete definition, but this last definition and the one that came just before it were most useful to me in understanding this concept. The first part of the first definition was OK, but the second part got a little more complex. I don't understand the term "fibrillar," so to use it again in the definition made it a little more difficult to understand. This is still better for me than the chemical definition. The shorter definition was useful because the key terms presented were "protein" and "contraction."

The point we're making here is that the audience for whom you are writing often is the judge of the effectiveness of what you have written. In this case, I don't think I'd give any of the definitions an "A" nor would I give any lower than a "C".

Now, look at the back of your card. If you were students in a class and this assignment were given to you, what

questions would be on your mind? What else would you want to know?

L. Holcomb: We were wondering what type of training our audience has.

C. Casaback: How involved did you want us to get? How did you want the writing assignment structured? And, as you said, the audience: we didn't know whether we were writing for the instructor who would have been more informed than we were, or a lay person such as yourself.

W. Means: We also want to know what audience level should the definition be directed to. Also, at the University of Wyoming and Kansas State and the other places we have been, our students always ask these two questions: How many points is it worth and when is it due?

D. Kropf: We were trying to think like students. When is this assignment due? How long is it supposed to be? How are you going to grade this? Does it need to be typewritten or can it be handwritten? What level can we assume it is written for?

J. Price: Should this be any specific length? Should it be written in sentence form or can we use keywords and phrases?

Holcomb: Is this for an individual myofibrillar protein or for myofibrillar proteins as a group?

C. Nick: Does spelling count?

B. Vance: My students want to know, can I use a diagram in this definition? Another question they want to know is, is this going to be on the final?

Banset: There are some things we don't have to tell students, some things they can guess at. The point of all of this is that in order for an assignment to be effective, we do have an obligation to answer most of the questions students have. And to simply say, "Write a paper on myofibrillar protein and its function in processed meat" is really not helping the students. We give them too many possible choices and sometimes they don't make the right choice and that affects their performance on the assignment. So as instructors, we do have an obligation to answer these kinds of questions to tell students what we expect, even as far as telling them what the length requirement is.

Now in this case, we probably gave you two pieces of information. First, the length requirement might be inferred from the fact that it can fit on the front of a 4x6 card; and second, it is due five minutes from when you start to write. But other than that, we gave you very little direction. If we had said, "You are going to write this definition so a non-expert can understand the concept" you would have approached it differently. You might have then decided to define protein because that may be a component of the term that this audience wouldn't understand. You might have even used a diagram if you felt that I would better understand it by seeing it. So by giving students this kind of information, we insure that they become more successful in what they write.

When you are planning a writing assignment for students, these are the things you need to think about as you begin to prepare. First of all, you have to have a clear and well-articulated purpose for making the writing assignment in the first place. What educational objective do you hope to achieve by asking the students to write? If that's only a

vague idea in your own mind, your students are going to give you vague writing because you haven't been able to clearly establish why they are doing it. I think most students are willing to do assignments if they know why you want them to do them. So giving them that kind of information up front and making sure it is clear in your own mind before you begin means that you are half way there.

Second, it is important to focus the writing assignments; to define an audience for the students, and to tell them the objective that the document is to achieve. What will be the function of this definition? Why does this audience need to know the meaning of this term? And then create a context within which the students are to write. We are trying to encourage students to practice the kinds of writing they'll be doing as professionals. And it is very difficult for them to make the distinction between academic writing and professional writing. But if you attempt to create a context—if you tell them "you are a consultant for the industry and you are writing an informational brochure for meat consumers," you've given them some kind of structure. Some students may stay within that structure, others may not. But at least they have a context to deviate from if they choose to do so.

We also would encourage you to call the writing by a specific name. Instead of just saying "write a paper," be more specific. What kinds of writing will students have to do in this profession? Will they write proposals, will they write abstracts, will they write lab reports? Identify the assignment by name so that they're used to calling a proposal a "proposal" rather than just a "paper." They should become familiar with that kind of language.

Finally, think about how you want students to approach an assigned writing task and how you are going to judge the writing. It is important for you to have a sense of what you want to see when the writing is finished and how you're going to convey to the students whether or not they succeeded in meeting the objective of the writing project. If we had told you at the outset that the basis for our evaluation would be whether or not a non-expert could redefine the term effectively, you would probably have approached the assignment differently. Are there any questions at this point or comments about this?

C. Faustman: We have a writing requirement that is university wide at the University of Connecticut. One of the classes that I teach is now a writing class. In order to pass the class, the students must pass the writing portion of the class, not just the other parts. I have a difficult time grading because I have to grade both the subject matter as well as the grammar and English components. Do you have any suggestions on how to grade such an exam? It is easy to grade the subject matter—there's a right answer and there's a wrong answer. I find it very difficult to set up a scale which fairly weighs subject matter and writing skills at the same time.

Banset: The point you bring up is one of the reasons we encourage you to develop a clear set of objectives for the writing and define the audience. You might say to the student, "You are writing this pamphlet to give consumers information about preservatives that are used in meats so that they will feel more comfortable about buying these products." If they understand that as the objective for the

writing, then your task as a reader is to try to put yourself in the position of that audience. You are a consumer who has concerns about the healthfulness of processed meats. If the student's paper doesn't dispel those kinds of fears, then the writer probably hasn't accomplished the objective. In that case, the paper could be grammatically correct, but it doesn't contain the right kind of information to meet its objective. By the same token, if you are trying to present something clearly and there are many grammatical errors that get in the way, I don't know that you could separate it and say, "It works on the information level, but it doesn't work on a grammatical level," because grammatical errors often interfere with our ability to understand something. As instructors, it is easy for us to say, "I think I know what she means." But as readers, we shouldn't have to do that kind of work.

It's best to go back to the original objective of the assignment. Has this writer accomplished the objective? In my approach to writing, I try not to look at content and grammar as distinct things. Instead, I try to see whether or not the writing as a whole meets the objective. That's easy for me to say and much harder for you to do. But it helps if you think ahead of time about how you are going to respond to the writing. If you want to make the distinction and say "I'm going to read through the document once looking for only grammatical and structural errors," you may wish to give it back to the student and let him try to fix it and then read it again for a final grade. That might help alleviate any kind of conflicts.

In my technical writing class, I sometimes structure an assignment that requires the reader of the paper to be someone outside of the class. I do a brief definition assignment that students have to write for a junior high level class. I actually have junior high students read the definitions, and if those students have difficulty, it means my student writers haven't done what they were supposed to do. There may be ways to make the audience real for them and the writing may shift.

Brink: I've been able to take what's called a holistic approach in evaluating the writing. You categorize the writing on a scale of one to five. We will give you an example of holistic scoring here in a few minutes. If that doesn't adequately address the question, please bring it up again at the end. You can develop very effective holistic criteria sheets as you go through the process of designing the writing assignment, which will make it easy to pull the criteria out rather quickly.

Regenstein: On the issue of context, I've given a few assignments where I've asked students to not write a classic paper, but to write... In one case, I gave them copies of bills pending on seafood inspection, asking them to write a letter to their congressman as if they were from the trade association, the fisherman's association, or a consumer group. I was trying to get them to not write an academic analysis of the bill. It was a very disappointing assignment in that they all wanted to write, to me, an academic assignment, and not to write to the audience that was being identified. As professionals, we do write these kinds of letters, but they couldn't step out of the classroom. I didn't do a lot of preparation probably in terms of preparing them for that kind of

assignment, but in part I wanted to see how they would do, if they were given such a context and I found that they have learned a few contexts in school and that's what they want to write in, those contexts.

Banset: Yes, it's very difficult for students, at that point in their lives, to see the difference between academic writing and professional writing. They have one primary objective, and that is to get a good grade on whatever they write. So when you introduce them to something new; they've never been asked to write in this way before, their tendency is to fall back on the way they've always done it. And I think that your observation that preparing them more carefully for that might have been helpful. You can begin the assignment with a preliminary audience analysis; just have them write a couple of paragraphs about what kinds of questions they think a member of that audience would have or what that audience knows, technically, about the kinds of things they'll be writing about, and that might help them shape the message more appropriately into a context.

Brink: One thing that was surprising to me as I got into the project was the idea that there are many purposes or objectives for a writing assignment. The first point that we made is that the teacher must establish the purpose of the writing. That's going to influence the criteria for evaluation. If I have as my purpose to teach students grammar, spelling and punctuation, the assessment I use is different than if my purpose is to help students apply what they have learned. There are related writing assignments, for various objectives. For example, when the objective is to give students a mode of self-expression and creative thought, the related writing assignment might be response journals, personal essays or short stories. This one for me is really enjoyable as an instructor. In teaching Animal Nutrition and Feeding class, I look forward to reading the papers when I assign the students to write an explanation of the functions of B vitamins to my five year-old daughter. This assignment connects the objective to be creative with a personal essay.

How many of you have used a journal in your class? For me, a journal is very useful. I use it to get all kinds of feedback. And one of the things that I do with the journal is have the students ask questions about the material. I assign the journal in a lab session with laboratory TA's, and I think the laboratory TA's learn quite a bit from the questions that the students pose. It is just an informal type of writing. There we are trying to have them be creative and be active in their learning.

M. Marchello: I think that what you've put down on paper is great. I just recently attended a writing session that I thought was very, very good and, hopefully, it will be useful for me in the future. One question that I have is grading and time, when are you going to have the time to do the grading if you are going to require these kinds of things? We know they're beneficial, but I guess this gets into evaluation and I assume you are going to address this, but time becomes very important. Your time. You can get involved with a lot of grading assignments.

Brink: Time is an issue. It's not only faculty time but student time. From a faculty point of view, one of the real benefits to me has been the holistic approach to evaluating writing, establishing a criteria sheet. If you design the

writing, the criteria sheet becomes just automatic from that. And Liz is going to share with you a little bit about a criteria sheet.

Banset: I wanted to say just a couple of things about the advantages of using informal writing in class. I think that when most of us think about a writing assignment, we assume the end product is a ten-page paper. If we have 80 students, that amounts to a lot of work for us at the end of the process. Informal writing can accomplish many of the same objectives that a long-range paper can accomplish with a lot less work for you as an instructor. The kind of informal writing that occurs in a journal can benefit the students a great deal because it makes them think. When you write about what you think, it makes you process information better. That's the purpose of using the journal. You don't have to grade it for grammar, punctuation and spelling. Tell your students, "I'm just looking here for a stream of consciousness, but I want to see what's going on in your head as you think about the things that we've been learning." Let them know it's OK to forget the punctuation or to misspell a word. You're more interested in knowing what's going on in their minds.

Other kinds of informal writing that may be useful would be for you to have the class begin with five minutes of writing. Students may write questions they would like to have you answer during that lecture session. You may choose 2 or 3 to pose their questions or collect them at the end. You may reserve five minutes at the end of class to have students write what they think was the main point you made during the presentation. You may pose a specific question at this point, "What is myofibrillar protein?" Have the students spend five minutes writing, then collect the papers. That will tell you whether or not your lecture was effective and who was sleeping. It will also help you identify main points you may have to emphasize in the next lecture. This gets students involved in writing and saves you a lot of work in the long run. We don't want to give you the mistaken idea that what we are talking about here is an extensive written document that will take up a lot of your time. There are many ways in which you can engage students in the writing process without making a lot of trouble for yourselves. So think about those kinds of informal writing even as you think of more formal types of writing. The 25-word essay is a wonderful exercise because students may not exceed 25 words, they must have exactly 25 words. Sometimes it takes a long time for them to write something like that because they have to think carefully about the value of each word they use.

C. Calkins: I use student journals in my class. In evaluating them, I read every response the students write. They get my feedback. But on those informal journals, I often just circle things which catch my attention. I sometimes add a comment or question in the margin. However, I don't feel compelled to mark every spelling or grammatical error I see. I tell the students that if they can't figure out what the problem is with the circled item, bring it to me and we will discuss it.

M. Judge: As a faculty member in English, to what extent do you get involved in writing activities of our students? In other words, is it unreasonable to expect you to do some reading to evaluate our students' writing ability?

Banset: No, I haven't found that an unreasonable expectation of me in my capacity as consultant in the Animal Science department. I think that's what I'm there for, so I have done that. One instructor was using a writing assignment for the first time. He was going to have his students write several things throughout the semester. I looked at the first completed assignment for him and made suggestions to him as well as suggestions to his students. One of my functions in this project is to help provide that sort of reinforcement.

We talked about the kinds of information that's important to give students. And I'm a firm believer in giving it to them in writing as well as simply telling them what you expect. That way they have a document they can refer to, especially if the assignment is going to take some time and effort. They may have to go back and consult the assignment sheet to find out simple matters like when the review draft is due. That information should be there. First of all, identify the writing project by title, instead of saying paper #1 or assignment 1. Call it what it is. If it is a definition of myofibrillar protein, give that as the title. Also identify your project objectives. On the writing assignment sheet, tell the students what educational objective you hope this assignment will help them meet. For example: "the purpose of the assignment is to help students present information in a language that lay people can understand." If that's what you're after, tell them that.

Also identify the type of document the students will write. Beyond the fact that you are asking them to write a definition, are they supposed to put it in some particular form? Should the definition appear in a memo to somebody? Should it appear in a pamphlet? What form will the document take? After that, try to establish a context for the students to write in. What's their role? Who are they writing for? Why will those readers be interested in the information they have to say? For example, the students should play the role of representatives of the meat industry and they are writing letters to a congressman about USDA regulations because they want them changed. One thing that could happen (other people have observed this) is that some students will not pay any attention to the role you establish for them and they will simply write to you as an instructor, telling you all they know about the topic. But giving other students a context in which to write gives them practice. Tell them what their task is. If there is anything else they have to do besides write, let them know. Go to the library and read the materials on reserve about such and such.

The assignment sheet should be complete enough that if they have questions, all you have to do is say "read the assignment."

M. Dikeman: You have talked about writing assignments themselves but you haven't addressed the students writing on examinations. I would also like to ask if writing assignments such as these and multiple-choice examinations are compatible.

Brink: They are compatible. We can do multiple-choice examinations after we have had writing activities throughout the course. Or we could have a writing assignment as part of the examination that has a multiple-choice component. I have done both and I think it works. If we have a mul-

multiple-choice component on an exam and a written definition or an essay, we can evaluate it for organization and content as part of the score.

Banset: I know I've been emphasizing creating professional contexts for writing, but it's OK to have a writing assignment in which the students address you as an instructor. I think that's what happens on essay exams. You want the students to let you know how much they've learned, so there is a direct student/instructor kind of relationship. I think you can still tell students that when they are writing essays on exams, the rules of writing apply. Tell them, "I expect complete sentences. I expect reasonable spelling, reasonable punctuation."

Brink: I think what we've done in the past in an essay exam is to muddle through all the poor organization, grammar and spelling and still give the student an A because the content is there. My point is that the essay should be evaluated as communication. We can explain how we are going to evaluate that by using a criteria sheet for essays which lists organization, grammar and spelling.

Banset: Dennis talked earlier about holistic evaluation. The approach with this kind of instrument is to look at the whole document, although we do break it down into components: depth and range of ideas, organization, style and tone, mechanics and surface features, and an overall response. In the long run, you evaluate whether the entire document accomplishes its objectives. The scoring sheet helps the students see which areas might need to be improved. For example, a low score in the area of organization tells the student that they need to organize more effectively. In our view, if you explain this sheet well to students, it provides a great deal of feedback without you having to provide a large number of written comments.

Grading of writing does not involve editing. I think this is what we have in our minds when we think about reading student papers. How am I going to get through this? How am I going to edit all of this? How am I going to help the students see all the areas they need to improve? Our responsibility, I think, is just to point out the areas the student is doing poorly in or the areas he or she is doing very well in. If you carefully talk to students about what your expectations are, when they get this back with check marks on certain areas, they'll know what it means.

Brink: I would like to make a comment about the scoring sheet and linking it to drafts. Part of the writing process is a draft. I provide this list when I make the assignment. Then when the draft comes in and I'm checking unacceptable in certain areas, I know I'm sending a clear message to the student. What I've found is that the students write to our expectations and they're much better writers when they are forced to write well. Through that process of evaluating the draft, the final copy comes in nice. If you follow the writing process and provide the feedback, you'll enjoy reading the students' final drafts. It's a little strong but that's what I've experienced.

Kropf: Does this work for each of the different types of assignments?

Banset: It has to be adapted in some cases, depending on what your expectation is. But I've found it to work for almost all types of assignments. In my technical writing class,

I have students write a technical definition for a non-expert, a description, instructions, a collaborative research project, and for all of those assignments, I've used a version of that score sheet.

J. Browning: I'm a teaching assistant for an introductory agriculture class and we have over 150 students in this class. They are required to write three to five essays during the course of the semester. How can you use something like this with time constraints of grading 100 papers in a week's time span?

Banset: My view is that if the students understand what the scoring criteria are to begin with, then it should be fairly easy to make marks on that scoring sheet. If you want to give more detailed feedback, of course, that takes a little more time. But one way to deal with that might be to have your students review for each other ahead of time, using the scoring sheet. That way they have a chance to get some additional feedback. They can revise the essay before handing it in to you for grading. You then have the benefit of another student's assessment as well.

M. Hunt: Do you ever give them examples, good or bad, so that they have some idea of what to do or not to do?

Brink: Yes, I give examples. I try to do a variety of these. If I'm doing a letter to Governor Nelson, I have some examples of the business letter and format and they can see it. If I'm doing an animal management project which involves outlining a reproductive management plan, then, yes, I have an example for that also.

Hunt: Have you had various people give students different messages or contradictions of what's good and what's bad?

Brink: No student has indicated that to me. I think by working with the faculty in the faculty workshops, we have formed a team and are speaking the same language. I think that this sheet helps. Elton Aberle may be able to respond to that but I haven't had a student say that.

E. Aberle: That concern has never come up from a student in an exit interview yet.

Hunt: Has it been habit forming for the students?

Brink: I don't have the answer to that. I think we have some soft data that says it is starting to have some effect. At least they're feeling more comfortable writing. We asked students an attitude question on the senior assessment, and their responses indicate that they are feeling good about their writing. Again, that's soft data; what Dr. Aberle tells us is that after the first semester of this project, we were all enthusiastic as faculty and we all had our writing assignments—maybe a few more than we needed. In the exit interviews with Dr. Aberle, the students were asking, "What is all this writing in Animal Science?" But, I think after a couple of years we have plateaued as a faculty and the students aren't saying as much negative about all the writing in Animal Science. I think they've accepted it as part of Animal Science. The other thing they're saying is that they're learning more by doing the writing.

D. Cornforth: I like the idea of students turning in a rough draft for long papers. Do you do that as well with shorter assignments?

Banset: From what the faculty have told me, I don't think we see that for short documents. It may be that some fac-

ulty will just have an in-class review. This could be 10 minutes during which students have the opportunity to look at drafts, but the faculty person never sees them until they are finished.

Brink: Even in a class with 125 students, I look at a rough draft of short assignments, business letters or memos, when that is a major focus in that class. I do that because I'm trying to model the writing process and they need the feedback.

Nick: When you're looking at the longer papers, do you then encourage or require the students to carry it one step further and make a short presentation in class?

Banset: Some faculty members do that, so students are then required to defend the paper. This could be either in class or to a panel of people or just the instructor. I encourage that even though we haven't focused on oral communication in this project. Some faculty have said that they would like help incorporating oral communication into their classes also.

B. Kenney: Are there any English prerequisites before they are put into courses with these writing assignments?

Brink: There are no English prerequisites listed for our Animal Science classes. However, most of our students take English composition as freshmen and a technical writing course as sophomores.

Kenney: You mentioned the idea of partnerships and collaboration. What kind of feedback do you get from the English department in terms of folks in Animal Science putting all this emphasis on writing assignments?

Brink: I've had no direct feedback, although on campus we have a seminar for faculty to get together and talk about writing. It's conducted by a professor in the English Department. I don't know how vocal he has been with respect to this project. He has asked me to come to that seminar and talk about the project. He cautions against having faculty become too critical of writing and thus suppressing creativity. But I think in general, he has applauded the project.

Banset: We do try to cooperate with the English Department, which has a writing lab for students. When we identify students who are having problems and will benefit from more intensive help, we send them there.

F. Parrish: My biggest problem in evaluating writing assignments is the student who really needs the help the most. I think in most cases I find myself less critical than I should be. In many cases, you would almost have to do complete editorial review. What do you suggest for providing help to juniors and seniors in this situation?

Banset: The first thing I think you must do is find out why they are having problems. Is it because they are writing a paper two hours before it's due? Or is it because they are really not able to write well? It's too bad if they're seniors and this problem hasn't been identified before this point. Are there resources available like a writing lab or some sort of services for students who need more intensive help at your university? I would encourage the students to take advantage of such resources or even use a tutor.

It may be worth it to take the time with a student to go through the paper and ask her to rewrite a section just so she can see the difference between the revised version and

what she originally wrote. It's especially important if the student really wants to improve. If it's a student who doesn't care, I wouldn't spend the time. But, if it is someone who really is concerned, then that probably justifies the time you might have to invest.

Brink: That's where I use the draft and this criteria sheet. If there is a serious problem, I'll try to contact students individually to talk about it. If they are really having problems on the final draft, that's when I would suggest outside help. We've had students who have gone to Liz in the department. But we don't think it is our role after identifying that problem to try to do everything in the department. I feel a responsibility to make them aware of the problem.

Banset: Let us hear from you. Is there anybody here who uses writing in your class, or has any unusual assignment or something you've found really effective? Is there something that you've tried and it didn't work? I think you learn a lot by hearing what other people do.

Nick: If you are teaching a class in which you strictly use handwritten things, how do you encourage your students to improve their penmanship? They got to college, but you still can't read what they write.

Cornforth: We also like to emphasize computer use at our university. Our campus has fairly good availability of word processors. So you might just require that they use a word processor.

Banset: Are you talking about things they write in class?

Nick: I coach a judging team so I'm talking about sending a student into a contest hoping that an Official Committee member can make out what he wrote on his reasons card.

Banset: Buy them all laptops. (laughter) Do they suffer because the judge cannot make out their handwriting?

Nick: Yes.

Banset: You can encourage them to do some independent writing. There are books on handwriting. Let them do those exercises independently. You don't have time in your class to spend teaching two or three people handwriting. If they recognize the fact that poor handwriting is affecting them adversely, they may be willing to do that work on their own.

T. Carr: Have you been able to document departmentally that this effort has in fact improved the ability of your students to communicate? Is all of the faculty effort paying off?

Banset: We are in the process of assessing student writing. We started two years ago by collecting writing samples from students in the Animal Science 100 course. Since that time, we have collected samples of writing from those students as they progress through our curriculum. We have also collected samples from the seniors for the past three years as a base for comparison. I can't tell you now what we will find. It is very difficult to say that changes in writing skills are due to any one particular factor. In many instances, simply making students aware of your expectations results in improved writing. If students know that you have high expectations, they will tend to live up to them.

L. Orme: Have incoming freshmen improved in their writing skills in recent years?

Banset: I can't comment on long-term changes. We have five semesters of data in the Animal Science Department and in that time we have not seen any significant change in

the writing skills of our incoming freshmen.

Kropf: We currently have an academic Quadrathlon. Maybe we should include writing and make it a pentathlon. Has anyone used this?

Berg: We started about 1923 doing that with students writing reasons. My students write 75 to 100 two-page reports every semester. Their objective is to defend the decision they have made. They must use their technical knowledge and direct the writing to an authoritative figure who likely does not agree with them.

Kropf: I have had students write reasons. And, I have read many in contests. However, I think this activity is quite narrow in its focus. How can we broaden it out to all the aspects which Liz and Dennis have been talking about here?

S. Doores: Has anyone used one of the grammatical computer programs like Right Writer?

Regenstein: I encourage my students to use the programs available on computers to improve writing. However, students seldom read the final draft after such programs are run.

Banset: I agree that students tend to let the computer do the final proof reading. They run spell check and miss those things like "form" instead of "from." Encourage students to use whatever tools are available to make the process more efficient for them. If you use the computer to take away some of the barriers to writing, it is more likely that the students will be creative.

Regenstein: Do you have any experience with interactive systems where the student puts it in the system and the faculty edits it on the computer?

Banset: I have some reservations about it. If you are all sitting in the same room, why communicate through computers? In some instances, the documents are simply delivered via electronic mail.

G. Dolezal: I think it is very fortunate that at the University of Nebraska, you're actually housed in the Animal Science Building and as Dennis pointed out, students can come to you for help. Are you housed there because of this grant or because Ag Communications put you there?

Brink: Liz is housed there through the grant. All the extra work and the nice things that have happened are because she is such a great person. She was assigned 25% of her time to work on this project. She spent way beyond that. We went through the proposal process and it was funded two years. We now have made recommendations as a group for

carrying on this process. We have asked our department head and head of department of Agricultural Communications to negotiate for continuation of this project.

Banset: In my department, too, we are looking at this as possibly a normal part of someone's assignment in teaching technical writing. Faculty might spend time, not just in Animal Science but in other departments in the college that are interested in the project. That part of it is slow moving, we were fortunate with the grant because that allowed these things to happen.

Brink: As far as the model is concerned, an intensive experience for one semester with the faculty workshops is needed to get it off the ground. When that's done, a resource person may be needed in the department for just a few hours a week. What we found is that coming to the department with the workshops is essential to assure full participation.

Banset: I think it's working in UNL's Animal Science department because the faculty have made a commitment to it. They're not willing to let that go. It's hard at first to convince a group of faculty of the benefits of this. Those that aren't convinced are likely to lose interest very quickly. My assessment is that most faculty in our department are still going with it.

This is just a summary then of the main points that we wanted to make today. First, students must know the purpose of a writing assignment, but before that, the person who's developing the writing assignment has to know what the purpose is. Second, creating a context enables students to apply information and skills in a practical way. Third, instructors should give students essential information about what they expect. I think we have an obligation to let our students know the basis upon which we will be evaluating their writing. It shouldn't be a surprise to them. Creating a clear, well-structured assignment does make evaluation easier, because you establish your assessment criteria at the outset. You know what it was you wanted to accomplish, you know what specific requirements you made of students, and you can use that as a basis for evaluating. Our final point is that instructors don't have to teach writing. You don't have to cite chapter and verse about grammatical or syntactical errors. Instead, the whole focus here is letting students use writing as a means of learning and as a way of preparing them for the kinds of responsibilities they'll have in their professions.