

Faculty Define the Role of Writing in the Social Sciences of Agriculture

H.R. Leggette¹
Texas A&M University
College Station, TX



Abstract

Faculty members who teach writing-intensive courses in the social sciences of agriculture defined writing using four themes—writing in agriculture, characteristics of effective writers, teaching writing and writing factors. Writing, as described by faculty, is a window to the brain and helps students retain and transfer knowledge. Therefore, effective writers have an imagination, a dedication to communicating, an understanding of style, a framework for writing, an inquisitive mind, a motivation to write and a want to know more. To become critical thinkers and knowledge creators through writing, students should present and defend a topic to a variety of public audiences, write repetitively and receive rich, timely feedback. Additionally, implementing reading assignments in writing-intensive courses helps students understand the real-world application of writing as well as the language of their discipline. Writing instructors should spend more time, however, linking writing to learning at the beginning of class, explaining how writing can help students learn more about their disciplines and discussing how to transfer writing skills. More research needs to be conducted on each one of the writing factors to determine at what level they impact critical thinking and knowledge creation, if in fact they do at all.

Introduction

In the past, faculty members contended it was not their responsibility to teach writing (Cobia, 1986; Kitzhaber, 1963; Stewart, 1987) because teaching content is an educators' first priority (Zhu, 2004). Writing, though, is a part of every discipline and cannot be taught isolated from it (Grimes, 1986). Strachan (2008) argued that learning the language of a discipline is part of gaining knowledge in the discipline. Language, as defined by Strachan (2008), is a discipline's "vocabulary, conventional sentence structures, patterns of organization and reasoning, [and] modes of audience address" (p. 50). Therefore, learning the language is an essential skill for a successful career (National Commission on Writing, 2003; Reynolds, 2010).

In 2003, the National Commission on Writing proclaimed that writing education needed transformation

and since that time, writing within the discipline has invaded college campuses. According to Hudd et al., 2013, writing instructors have two roles: coaches who guide the creative and discovery process and teachers who help students understand writing conventions and standards within the discipline. Bean (2011) argued that students fail as writers because of writing instructors lack of effort to teach writing. Teaching writing is time consuming (Bok, 2006), but Soven (1986) suggested it cannot be eliminated at the cost of teaching content. If faculty focus more on helping their students during the development stages of the writing process, it would eliminate hours spent providing summative feedback at the end of the project (Schiff, 2010).

In separate studies more than two decades apart, faculty recognized their lack of skills to teach discipline-specific writing (Cobia, 1986; Rocca, 2010). "No way! Are you crazy? I don't have enough 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 to write properly. I'm not trained in writing; it's not my job" (Cobia, 1986, p. 22). Although faculty in Cobia's study seemed to lack the desire to learn how to teach writing, Rocca (2010) found faculty showed a moderate to high level of interest in improving their ability to teach writing even though they recognized their lack of skills.

Purpose/Objectives

The purpose of this qualitative study was to define writing in the social sciences of agriculture using semi-structured interviews with faculty who teach writing-intensive courses at Texas A&M University. Three research questions guided this study:

1. Is writing important in the social sciences of agriculture?
2. How do faculty in the social sciences of agriculture teach writing?
3. What are the writing factors that augment critical thinking and create knowledge?

¹Assistant Professor, Department of Agricultural Leadership, Education and Communications, 262 AGLS, Mail Stop 2116, College Station, TX 77843-2116; Tel: 979-458-3039; Email: hollie.leggette@agnet.tamu.edu

Context of Study

Texas A&M University is a research university that enrolls more than 55,000 students pursuing bachelors, masters and doctoral degrees. Each Texas A&M undergraduate student is required to complete two writing/communication intensive courses as part of the Communications in the Disciplines program. Students have a choice in how they can meet the program's requirement: one writing-intensive course (W course) and one communication-intensive course (C course) or take two writing-intensive courses (Texas A&M University Writing Center, 2014).

W courses are courses within the discipline and content area that integrate writing as a way to demonstrate knowledge and/or reinforce learning (Texas A&M University Writing Center, 2014). The course must be within the students' major and require writing that is related to the type of writing students will be expected to do within the industry. Students must be given the opportunity to improve the major writing assignments incorporated in the course and be provided writing instruction throughout the writing process. According to the Texas A&M University Writing Center (2014), writing assignments should be used as a method of learning and teaching course content and should inspire students to be creative, use critical thinking skills and take ownership of their writing. Additionally, the writing assignments must account for 33% of a three-credit hour course (Texas A&M University Writing Center, 2014).

Therefore, faculty of each department in the College of Agriculture and Life Sciences were required to identify, design and teach courses that met the program requirements. Faculty, many of whom have not been trained to teach or assess writing, have taught and continue to teach courses that incorporate writing assignments and tasks representative of the writing tasks students encounter as professionals. The faculty in this study represented three social science departments—agricultural economics; agricultural leadership, education and communications and recreation, park and tourism sciences. The study was limited to the social sciences because those faculty work with the institution of human society as it relates to agriculture and because of the diverse scientific disciplines and writing contexts in agriculture. Because the study only included a limited number of faculty in each department, the findings may not be exhaustive or completely representative of the faculty as a whole. The faculty who teach writing-intensive courses are experts in their field but are not necessarily experts in writing. However, they have been deemed credible by their peers to serve as experts pragmatically through teaching writing-intensive courses.

Method

In 1981, Farr claimed that writing research needs to begin with the practicality of teaching writing and that writing instructors should be a part of the research process and question development. Therefore, because this study was the first phase of a larger, more in-depth

research project, semi-structured interviews (Lindolf and Taylor, 2011) with faculty members were used to describe writing in the social sciences of agriculture. Purposive sampling (Wiersma and Jurs, 2005) was used to identify the population for the study. Faculty members who taught a writing intensive course during the fall 2011 and spring 2012 semesters were selected because they had taught a writing-intensive course recently. The search yielded 22 faculty members in the social sciences of agriculture. One faculty member was pulled from the population because of the absence of contact information.

Faculty members were then randomly selected from the sub sample because Wiersma and Jurs (2005) recommended randomly sampling the purposive sample if the purposeful number exceeded the number of interviews that needed to be conducted. Twelve faculty members were emailed or spoken to, ensuring at least eight would participate in the study. Data collection began after the research protocol was approved by the Institutional Review Board. The point of data saturation was reached because the eighth interviewee generated no new data (Baker and Edwards, 2012). Of the sample, at least two faculty represented each department. One department had four representatives because of its diverse programs. Five faculty were non-tenure track and three faculty were tenure track.

Each faculty member was assigned a code to maintain confidentiality. The code included a descriptor (NNT = non-tenure track; TT = tenure track) and a unique number. The faculty were coded as non-tenure track and tenure track because the expectations and teaching responsibilities are different for the two groups. Therefore, the perspectives on teaching writing and the level of involvement with their students could be evidenced in the study's results.

Interview questions were developed based on the researcher's concerns as a writing instructor and researcher, a review of literature and prominent theories and conceptual models of writing. Questions focused on faculty members' definitions of writing-intensive courses, description of writing-intensive courses in their disciplines, experiences as writing-intensive course instructors and perspectives of writing in their disciplines. The interview questions and protocol were tested, revised and modified using a pilot study interview and the interview protocol was revised as necessary after each interview.

The interviews were transcribed, coded and analyzed using qualitative research procedures recommended by Lindolf and Taylor (2011) and interview transcripts were coded using an open coding technique (Strauss, 1987). The categories, codes and sub codes were reconciled and the interviews were compared for similarities. Triangulation was achieved through interviews, field notes, reflective journal and data collection using other research methods with similar populations (Lindolf and Taylor, 2011). A thick description of the data and exemplars was used as a framework for the nar-

Faculty Define the Role of Writing

rative (Lindolf and Taylor, 2011). An audit trail of initial analyses, definitions of codes and categories, field notes and coded samples were kept to maintain dependability (Lincoln and Guba, 1985).

In addition, during the spring and summer 2012 semesters, the researcher kept a reflective journal about her experience as a writing intensive course instructor and reflected back on the experience as she analyzed the findings. “The qualitative analyst owns and is reflective about her or his own voice and perspective” (Patton, 2002, p. 41) as the data collector and interpreter (Merriam, 2009). The researcher’s position helps the reader to clarify how and why the data were interpreted (Merriam, 2009). The researcher collected and analyzed the data based on her experience balancing teaching, research and graduate student responsibilities while meeting the demands of teaching a writing-intensive course. Although she has experience teaching writing, unlike some of the faculty she interviewed, she felt the stress of balancing responsibilities with the increased demand of grading and teaching an essential life skill. Patton (2002) stated a strength of naturalistic qualitative research is that a researcher is part of the phenomena being investigated so the situation can be better understood. The researcher’s experience helped her understand the faculty’s attitudes about and ideas of being a writing-intensive course instructor.

Findings

Faculty members who teach writing-intensive courses in the social sciences of agriculture defined writing using four themes—writing in agriculture, characteristics of effective writers, teaching writing and writing factors.

Writing in Agriculture

Writing is a mechanism that moves a student from “a number cruncher to a good decision maker” (TT02). Even though it is a valued skill in the workplace and is important in the decision making process (TT02), it is often undervalued in schools (NTT03). A non-tenure track faculty member (NTT02) emphasized that an employer’s first impression is often writing ability—“to establish professionalism, to establish diligence, to establish patience” in communication and information delivery.

Writing is a “multi-circular process” (TT03) that takes time because editors and multiple points of revision contribute to effective writing (NTT03). The first draft is never finished, but “if you go through the right process, the end product will be there” (NTT03). Students do not know, though, how to write something, set it aside for a day

or two and come back to it later (TT03). Additionally, students should proofread paper copies and not online copies (TT02). “Print it out and go away. Read it later. Hand in a paper copy. You notice typographical problems when you print it out” (TT02).

More than a process used to disseminate information, writing is a method of assessing students’ knowledge about a topic (TT01) because it is a “window into the brain in terms of how people think, how they make and support arguments and how they solve problems and use resources” (TT01). It requires them to struggle with their own ideas and put those ideas on paper in an organized way (TT01; TT02). Students “transfer knowledge from thoughts to paper” and communicate a vision when they write (TT01). Writing has the ability to help students think about things in deeper, more complex ways and think about how to apply information. But, many of them sit down and write like they think—“stream of consciousness, regurgitating their thoughts, not planning how they are going to say it” (TT01).

Though writing is important and it is often an employer’s first impression, students, many times, do not have the confidence or patience to start writing, revise their work, clearly state ideas and thoughts, make decisions and judgments and proofread (NTT02; TT02). A challenge is balancing “the patience of let’s bang this out real quick and let’s make it good and revisit it next week without that repetition of doing it over again and without getting them to be negative toward it” (NTT02).

Characteristics of Effective Writers

Faculty explained that effective writers have certain characteristics that set them apart from ineffective writers (Table 1). Effective writers have an imagination, a dedication to communicating, an understanding of style, a framework for writing, an inquisitive mind, a motivation to write and a want to know more (NTT04). Writing is an “expression of thinking” (TT01) and “the thought process of the continuum—the logical flow” (NTT02).

Table 1. Characteristics of Effective Writers

Characteristic	Participant ID
Be clear, concise, and precise	NTT02; TT01; TT02
Build the picture from A to B to C to D and not go from A to D and then fill in the Bs and Cs.	NTT02
Condense information	NTT01; TT02
Critically analyze, answer, and convey information, problems, and questions	TT01; NTT01
Determine a story and how it relates to an audience	NTT03
Document thought and report the basics	NTT02; TT01; TT02
Find balance between making the article personal and using only other people’s thoughts	TT01
Find, understand, and incorporate credible sources and research	TT01
Make correct judgment and inferences about the data	NTT02
Manage time, use resources, and find support and answers	TT01
Organize thoughts and do not regurgitate words on paper	TT01
Process information while determining the most important information and transferring that information into a story)	NTT03
Say things in as few words as possible	TT01
Say what they intend to say and avoid noise	TT03
Think through and plan arguments and responses in a clear way	NTT03; TT01
Understand discipline specific terminology	NTT02
Understand grammar, mechanics, and punctuation (e.g., spelling, parts of speech, sentence structure, organize paragraphs, comma and apostrophe usage, noun and its pronoun antecedent)	TT01; NTT02; NTT03
Understand the big picture	NTT02
Use evidence to objectively explain information	NTT02; TT01; TT02

Teaching Writing

Because teaching students to become effective writers is not about a single activity, teaching technique, or assignment, writing-intensive courses should include various types of assignments, resources, reflection and instruction (NTT05). In addition to activities, techniques and assignments, instructors can help students become effective writers through motivation and guidance (NTT02). Instructors can motivate students to “see a different angle [by] gradually giving students a little bit until they have the whole thing” (NTT02).

Applied writing assignments are effective ways to teach writing (TT01). Writing taught through application helps students understand the process of producing a typical document in their field and the reflection helps them analyze the product and process retrospectively (TT01). Students in one course research an organization and write about a specific topic related to the organization’s needs (TT01). Much of the research involved with the project includes reading about and understanding the organization. Reading is important to becoming an effective writer (TT01; NTT03) because students can develop more effective content when they read information and material related to what they are writing. More reading should be required in writing-intensive courses because it forces students to read the writing style they are expected to write (NTT03).

One non-tenure track faculty member designs assignments that help students understand structure, organization and writing for a specific audience (NTT01). He said he focuses on teaching students how to write and define a major point before teaching them how to develop and understand paragraphs and sections of the document. For example, “introduction is the roadmap paragraph of exactly what you are going to say. It just gives clarity to the paper” (NTT01). So, if the introduction is not clear and it does not establish a foundation for the document, then the introduction is weak (NTT01).

Thus, teaching a one-hour course that introduces students to specific writing styles, document sections and formats would help students become effective writers (NTT01). The course content should be taught using a guest lecture series format in a 14-week semester and should provide students with guidance in style, citations, etc. and explain writing components and subcomponents. Also, providing students with basic grammar sheets (NTT03) and reviewing expectations and tips related to writing at the beginning of the semester (TT01) can help students improve their writing ability. Students must know how to critically analyze information, but that can be taught (NTT01). They “do not like to write because they do not know how to use English properly” (NTT01). Students’ writing is a basic, fundamental type problem that could be addressed by requiring two English courses or implementing a one-hour fundamental course (NTT01).

In addition to writing instruction, all three of the departments offered students resources to become more effective writers. One department has a writing

lab that provides students support in developing course assignments and learning the fundamentals of writing (NTT01). One faculty member (NTT03) used Purdue Owl, an online resource that helps students properly use APA style and provides clear, concise examples of proper grammar. A tenure-track faculty member (TT01) provides students with examples of effective documents and leaves gaps to let them think about how to do things, which makes them come to office hours for feedback and help. Whereas, another tenure-track faculty member (TT03) provides students with experience in, resources about and instruction on peer and self-evaluation but focuses on teaching them how to have others edit an assignment before turning it in.

Writing Factors

Three writing factors that augment critical thinking and create knowledge emerged as part of the study. Faculty believed that presenting and defending a topic to a variety of public audiences, writing repetitively and receiving rich, timely feedback were instrumental in students’ ability to think critically and create knowledge.

Students need to have the ability to present and defend a topic to a variety of public audiences in a succinct way (NTT01; NTT02; TT01; TT02). Writing is explaining (NTT01) and “summary is a gift upon itself” (NTT02). Traditionally, students write for an audience of one—their instructor. However, learning to write for an audience larger than one faculty member is important (NTT02). Students need to know “how important their writing can be to someone they do not even know is reading it” (NTT02). In the same way, students need “to put themselves in the shoes of the reader” (TT03) to realize the ramifications of the things they write (NTT02).

Writing for one group can be easy, but interpreting the same information for three or four different groups is more challenging (NTT01). When students present information to public audiences, they learn to make arguments based on an understanding of all sides of the situation (NTT02), express themselves and their opinion and support their opinion with facts and evidence (TT01). Obtaining written feedback from students is one way for instructors to understand students’ comprehension of a subject matter and document students’ success (TT02).

Second, writing repetition is important in students’ ability to become critical thinkers and knowledge creators (NTT01; NTT02; NTT03; NTT04; NTT05; TT02; TT03). Writing should be constant in a writing-intensive course (NTT04). It should include opportunities to use a variety of writing scenarios (NTT04) and produce multiple writing drafts and assignments (NTT05). Students should write at least once a week while completing other writing assignments (NTT03). The more opportunities students have to write and be critiqued by their instructors, the more effective writers they will become (NTT01; NTT04). “The more papers you write, the better you get at it” (NTT01), which was reiterated by another faculty member (NTT03) with the “*best way for students*

Faculty Define the Role of Writing

to become better writers is to write more; it takes doing it over and over again so it becomes second nature."

Third, faculty should provide students with rich, timely feedback. Indeed, small class sizes provide faculty with an environment that fosters more individualized feedback because it helps faculty build stronger, more helping relationships with their students (TT01). Feedback should be constant and timely (NTT03; TT03) because of its importance in the writing process (NTT01; NTT03; NTT05; TT01; TT02). "Constant writing and constant feedback—every assignment should be graded and explained heavily" (NTT03). The amount of time spent writing improves student writing only if there is feedback because, without feedback, students make the same mistakes again and again (NTT05).

Rich feedback should be given through constructive criticism on what students are doing wrong (e.g., grammar, APA style), rewrite options and recommendations from instructors and peers on how to become more effective writers (NTT05; TT01; TT02; TT03). Students need to learn how to provide constructive feedback because, as managers, they will be required to provide feedback to their subordinates (TT02). When students have the opportunity to rewrite an assignment, they should be required to do more than just rewrite the assignment (NTT01). Telling students they can revise can be dangerous because they can turn anything in and fix it later (TT02). "I don't want them to just rewrite and make corrections. I want them to think a little bit" (NTT01). Therefore, "do not tell them what to fix. Just tell them it needs fixed" (TT03). Reviewing, then, should help students learn not only how to provide feedback but also how to understand and revise based on feedback (TT02).

Additionally, to improve the feedback process, faculty should assign students small writing tasks that build on each other because they can provide more focused feedback throughout the process. Assignments should be like a scaffold—small assignments that culminate into larger assignments (NTT01; TT01). The small assignments help students break up the project into manageable pieces and give them opportunity to set and work toward the goal of a large project. "Biting off chunks and getting feedback on those chunks as they go" (TT01) is an important part of putting together a higher quality final product.

Discussion

Faculty members who teach writing-intensive courses in the social sciences of agriculture defined writing using four themes—writing in agriculture, characteristics of effective writers, teaching writing and writing factors. Faculty reiterated that students should learn to write because employers expect college graduates to be effective communicators. However, students' first negative impression in business is often their inability to communicate with both external and internal audiences.

Writing is important in the social sciences of agriculture because it is an indicator of how people

think. It is a method of reflection, knowledge telling, assessment and evaluation, which was evidenced in the literature (Bereiter and Scardamalia, 1987; National Council of Teachers of English, 2009; Strachan, 2008). One faculty member (TT01) described writing as a "window to the brain in terms of how people think, how they make and support arguments and how they solve problems and use resources," which is a strong, yet, true statement that reflects the importance of students learning how to use writing to think critically.

Teaching strategies and techniques can influence the development of critical thinking skills as they relate to writing. Writing, when embedded into a course, can help students understand course material, which was also discussed by Aaron (1996). However, students often rush through writing tasks and do not take time to develop, revise, rewrite and edit. They are quick to mark a task off of the list and move on to the next assignment (TT03). Perhaps, writing instructors should spend more time linking writing to learning at the beginning of class, explaining how writing can help students learn more about their disciplines and discussing how to transfer writing skills from one class to another. Additionally, instructors could implement reading assignments to help students understand the real-world application of writing as well as the language (Strachan, 2008) of their discipline.

Furthermore, faculty described three important writing factors that augment critical thinking and create knowledge—presenting and defending a topic to a variety of public audiences, writing repetitively and receiving rich, timely feedback. The ability to present and defend a topic to a variety of public audiences is important because, to sufficiently present information for retention, students must possess an adequate understanding of the information themselves. They must be well-researched and have the ability to find credible information (TT01). Knowing an audience requires research and the ability to ask the right questions about an audience. However, students often fail to spend the time to understand their audience, which is important in becoming an effective writer and in building a foundation for success in discipline-specific courses.

Students often write for one audience—their instructor—but they need to learn to write for a broader audience, which was evidenced in the literature (Aaron, 1996; Bereiter and Scardamalia, 1987; Walker, 2011). If students are not expected to defend their argument to a larger audience, they will never move from knowledge telling to knowledge transforming, as Bereiter and Scardamalia described in 1987. Students need to reach the knowledge transforming level of writing development, but they must have opportunity to present and defend what they know.

Also, faculty emphasized that students should be provided with opportunities for writing repetition because writing becomes easier and students become more effective writers with more writing opportunities. The amount of time spent writing increases students' ability to

write, which Orr (1996) and Walker (2011) found as well. According to Vanderburg (2006), students must spend time writing, which is one of the hardest parts about writing instruction. Although writing in the classroom is tedious, time consuming work, it is one of the only ways students will become effective writers (NTT03; NTT04; NTT05). Students cannot become effective writers by producing one to two writing assignments during a semester.

Repetition alone, though, does not improve students' writing abilities because students must also receive rich, timely feedback. Although faculty in this study encouraged rich, timely feedback, it is a highly debated topic because of the need for faculty time and commitment, an evident point in Cobia's 1986 study. Constant feedback, however, does help students become effective writers, which Bok found in 2006. If faculty can provide students with feedback on small assignments that build into larger assignments, it is likely that faculty will not have to spend as much time grading large assignments at the end of the semester. The building process can help students clarify their projects and understand how to take a complex project from start to finish (TT01), which provides them with a snapshot of a real-world project that they might encounter as a professional.

Rich feedback, however, is not simply making a few comments on an assignment—it is providing students with specific resources to improve their writing and making them aware of their mistakes (NTT05; TT01; TT02; TT03). For example, if a student has a misplaced modifier, the instructor should not correct the sentence for him or her. The instructor should tell the student he or she has a misplaced modifier in the specific sentence and provide a resource for the student to use as a guide. Additionally, telling students that they will have the opportunity to rewrite their assignment could cause issues because the student may not take the assignment as seriously the first time (TT02).

Recommendations for Research

Just as Vanderburg (2006) postulated, more research needs to be conducted on the methods of helping students become more effective writers. Although certain themes emerged that are important in using writing to enhance critical thinking, more research needs to be conducted on each one of the writing factors to determine at what level they impact critical thinking and knowledge creation, if in fact they do at all.

Furthermore, it is important to determine the effects of having multiple points of feedback and the level of feedback that works best in the classroom. Future research could be conducted on the best types of feedback and ways to provide feedback. Furthermore, similar studies should be conducted in other social science departments across the country as well as in bench science departments at Texas A&M University. Replicating this study in other settings is important because the results of this study cannot be generalized beyond the population.

Recommendations for Practice

Writing instructors can modify their curriculum to include writing factors and teaching techniques that contribute to students' development as critical thinkers and knowledge creators. For example, if faculty know that writing repetition with multiple points of feedback improves students' ability to think critically and write effectively, they can adapt the course schedule to include points of individual and group contact.

Establishing a baseline of students' understanding of writing mechanics expected in their specific disciplines would help students further understand their discipline and the instructor's expectations. Further, to combat the issue of understanding typical and atypical audiences within the disciplines, faculty should spend at least one class period during a semester discussing audience for that specific discipline and how to identify and target the discipline's audiences. As a final point, faculty should be open to trying new ways to teach writing and have a willingness to conduct research in their courses.

Summary

This study provides a foundation of research that can be implemented in the classroom or be used to develop larger, more complex research projects. Understanding how students become effective writers and what writing factors contribute to their writing development would provide administrators and faculty with an in-depth description of how to make writing instruction more effective. Exploring different points of view will develop a strong foundation and baseline of what writing instruction should include for retention and transfer of knowledge in the social sciences of agriculture. In the end, students should not be educated in the separate institutions of agriculture and writing. They should be educated in agriculture and writing simultaneously. "It takes a campus to teach a writer" (Maimon, 2012, p. 97).

Literature Cited

- Aaron, D.K. 1996. Writing across the curriculum: Putting theory into practice in animal science courses. *Jour. of Animal Science* 74: 2810–2827.
- Baker, S.E. and R. Edwards. 2012. How many qualitative interviews is enough? Expert voices and early career reflections on sampling and cases in qualitative research. Unpublished manuscript.
- Bean, J.C. 2011. *Engaging ideas: The professor's guide to integrating writing, critical thinking and active learning in the classroom*. San Francisco, CA: John Wiley and Sons.
- Bereiter, C. and M. Scardamalia. 1987. *The psychology of written composition*. Hillsdale, NJ: Lawrence Erlbaum Associates.
- Bok, D. 2006. *Our underachieving college: A candid look at how much students learn and why they should be learning more*. Princeton, NJ: Princeton University Press.
- Cobia, D.W. 1986. Incorporating writing in agricultural courses. *NACTA Jour.* 30(2): 22–25.

Faculty Define the Role of Writing

- Farr, M. 1981. Moving between practice and research in writing. In Humes, A. (ed.), Proc. of the NIE-FIPSE Grantee Workshop. Los Alamitos, CA: SWRL Educational Research and Development.
- Grimes, D.G. 1986. University of Montevallo: University writing program. In Connolly, P. and T. Vilardi (eds.), New methods in college writing programs: Theories in practice. New York, NY: The Modern Language Association of America.
- Hudd, S.S., L.M. Sardi and M.T. Lopriore. 2013. Sociologists as writing instructors teaching students to think, teaching an emerging skill, or both? *Teaching Sociology* 41(1): 32–45.
- Kitzhaber, A.R. 1963. Themes, theories and therapy: The teaching of writing in college: The report of the Dartmouth study of student writing. New York, NY: McGraw-Hill Book Company, Inc.
- Lincoln, Y.S. and E.G. Guba. 1985. *Naturalistic inquiry*. Newbury Park, CA: SAGE Publications.
- Lindolf, T.R. and B.C. Taylor. 2011. *Qualitative communication research methods*. 3rd ed. Thousand Oaks, CA: SAGE Publications.
- Maimon, E.P. 2012. Information, knowledge and wisdom: Transforming education. *Social and Behavioral Sciences* 55(5): 94–99.
- Merriam, S.B. 2009. *Qualitative research: A guide to design and implementation*. San Francisco, CA: Jossey-Bass.
- National Commission on Writing for America's Schools and Colleges. 2003. The neglected "R": The need for a writing revolution.
- National Council of Teachers of English. 2009. *Writing in the 21st century: A report from the NCTE*. Urbana, IL: National Council of Teachers of English.
- Orr, C.L. 1996. Communication across the curriculum in animal science. *Jour. of Animal Science* 74(11): 2828-2834.
- Patton, M.Q. 2002. *Qualitative research and evaluation methods*. 3rd ed. Thousand Oaks, CA: SAGE Publications.
- Reynolds, D.W. 2010. Assessing writing, assessing learning. Ann Arbor, MI: The University of Michigan Press.
- Rocca, S.J. 2010. Determining the professional development needs of faculty in a college of agriculture. *NACTA Jour.* 54(1): 69–75.
- Schiff, J. 2010. Toward a human geography: Thoughts about in-class writing environments. *Jour. of Teaching Writing* 4(2): 162–169.
- Soven, M. 1986. La Salle University: Freshman composition program. In Connolly, P. and T. Vilardi (eds.), *New methods in college writing programs: Theories in practice*. New York, NY: The Modern Language Association of America.
- Stewart, B.R. 1987. Teaching the basics in agriculture. *Agr. Education Magazine* 59(11): 11.
- Strachan, W. 2008. *Writing intensive: Becoming W-faculty in a new writing curriculum*. Logan, UT: Utah State University Press.
- Strauss, A.L. 1987. *Qualitative analysis for social scientists*. New York, NY: Cambridge University Press.
- Texas A&M University Writing Center. W or C course facts. (<http://writingcenter.tamu.edu/Advisors/W-C-Courses-%281%29>). Texas A&M University Writing Center. (Dec. 13, 2014).
- Vanderburg, R.M. 2006. Reviewing research on teaching writing based on Vygotsky's theories: What we can learn. *Reading and Writing Quarterly: Overcoming Learning Difficulties* 22(4): 375–393.
- Walker, E.L. 2011. Engaging agriculture students in the publication process through popular press magazines. *NACTA Jour.* 55(4): 53–58.
- Wiersma, W. and S.G. Jurs. 2005. *Research methods in education: An introduction*. Boston, MA: Pearson Education, Inc.
- Zhu, W. 2004. Faculty views on importance of writing, the nature of academic writing and teaching and responding to writing in the disciplines. *Jour. of Second Language* 13: 29–48.

**Keep up-to-date with NACTA
on our website:
www.NACTAteachers.org**

