EFFECTS OF A PROCESS WRITING CURRICULUM

ON STUDENTS IN AN AGRICULTURAL

COMMUNICATIONS COURSE: AN

EXPERIMENTAL STUDY

By

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Pursuing my doctorate has taught me many things, both within and outside the classroom. I have confirmed anyone can accomplish anything he or she desires with a little hard work and commitment. Most importantly, and something I am still struggling to achieve, one must live each day to the fullest. For yesterday is history, tomorrow is a mystery, but today is a gift: that's why we call it the present.

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CHAPTER I

INTRODUCTION

The College Board Report of the National Commission on Writing in America's

Schools and Colleges (2003) recently proclaimed, "Writing is not a frill for the few, but a

skill for the many" (p. 11). This statement was issued in a 2003 benchmark report by the

College Board addressing the need for a writing agenda that would serve the 21st century.

More than 30 years ago the importance of writing in schools and colleges became

apparent, and the inception of Writing Across the Curriculum took hold (Stanley &

Ambron, 1991). This national interest paralleled the similar movement of Writing in the

Disciplines and forced educators to realize the necessity of writing beyond the doors of

the English classroom. Since that time, writing has become a significant component of

many disciplines at colleges and universities across the country. As such, the need for

skilled writers in all fields of study has become clear to academia and industry alike.

Thompson (1987) stated college graduates often are criticized for their poor

language skills. Many wonder how that can be with Writing Across the Curriculum and

Writing in the Discipline in place. The battle for marked writing improvement has been

waged, but it has yet to be won. Students and teachers must devote the time and effort

necessary to mastering more than rote grammar and punctuation skills. They must truly

learn writing is not merely an act, but rather a process. Because of this national combined

movement, researchers have agreed one of the most effective techniques for teaching

writing is process writing (Unger & Fleischman, 2004).

Because process writing entails more than merely producing and publishing a

written work, the guidelines that frame the process writing model must be examined.

Specifically how these guidelines address writing in a particular context or area of specialization is important to consider when designing an effective and successful curriculum. At Oklahoma State University, the College of Agricultural Sciences and Natural Resources has many majors and emphasis areas for students. The College Board Report of the National Commission on Writing for America's Families, Schools and Colleges (2004) declared, "Educational institutions interested in rewarding and remunerative work should concentrate on developing graduates' writing skills" (p. 19). The Commissions' findings are not fodder for new discussion, rather a rehashing of the need for a 'back to the basics' approach to the overarching subject. Parallel to the Writing Across the Curriculum movement, Faigley and Miller (1982) found writing on the job did indeed influence an employee's success within a company. Therefore, whether we look at 20 years ago or today, it appears regardless of their chosen field of study, students must be able to write proficiently if they are to be successful in today's business world. In a 2004 interview (The Corporate Citizen) , U.S. Secretary of Education Rod Paige advocated for the U.S. educational system laying a foundation for students:

> Students need a solid foundation in reading, mathematics, writing, critical thinking, communication, history, and computer skills. When they receive this from our educational system, they have the skills necessary to learn and grow. That is what educational programs strive to provide worldwide. Success in doing this job is a predictor of success in acquiring other skills, meaningful employment, and career choices.

Experiential learning theorists, such as John Dewey (1938) and Jean Piaget (1952), long ago established the criteria of students learning by doing. In writing, this

holds especially true. Educators cannot expect students to improve writing performance without the opportunity to spend considerable amounts of time writing. Educators at the post-secondary level are beyond teaching students what to think, they must guide students in how to think. Indeed, Monroe affirmed, "Effective writing is central to the work of higher education" (2003, p. 5). Tsui (2002) stated in teaching students how to think we are developing much more than efficient writers:

> Higher-order cognitive skills, such as the ability to think critically, are invaluable to students' futures; they prepare individuals to tackle a multitude of challenges that they are likely to face in their personal lives, careers, and duties as responsible citizens. Moreover, by instilling critical thinking in students we groom individuals to become independent lifelong learners – thus fulfilling one of the long-term goals of the educational enterprise (p. 740).

Thus, it is logical to assume students who spend more time writing in all classrooms are better prepared and more successful in writing and ultimately life as a result.

<center>Problem Statement</center>

The necessity of writing is apparent to business and academia; yet many college graduates today still lack the fundamental writing skills necessary to succeed. Institutions of higher education are not fully preparing students for success if they do not emphasize and teach the importance of writing across all disciplines and in all fields of study. This study seeks to determine if the use of the process writing model curriculum improves the writing performance of students in an agricultural-context communications course.

Purpose

The purpose of this study was to test the writing skills of students enrolled in an agricultural writing course at Oklahoma State University, and to determine if the use of a process writing model used in an agricultural-context course would improve students' writing ability upon completion of the course. The assumption was students who were in the course section using the process writing model guidelines would achieve greater improvement in writing skills, as well as attitude toward the task of writing in general. Writing ability was measured by students' grade point average in previous English courses at the university level, as well as standardized test scores.

The need for the study materialized as a result of students enrolling in the 3000-level course often having poor or inadequate writing ability. The students range in major from all departments in the College of Agricultural Sciences and Natural Resources, yet many seemed to share the phenomena of not being able to write well as a whole, based on course assignments and previous English course grades. While the course being used to study the problem is generally taken as a third credit course in fulfillment of English credits, many students enter the class with little or no measurable improvement having been made as a result of taking the previous two courses.

Definitions

<u>Writing Across the Curriculum</u> – Writing movement begun in the 1980s in response to a perceived deficit of student writing ability (Stanley & Ambron, 1991).

<u>Writing in the Discipline</u> – Writing movement that emphasizes writing in context-specific areas (Ochsner & Fowler, 2004).

Agriculture – The broad industry engaged in the production of plants and animals for food and fiber, the provision of agricultural supplies and services, and the processing, marketing, and distribution of agricultural products (Herren, 1991).

Process Writing – Method of teaching writing through a distinct process evolving from prewriting to a final product (Unger & Fleischman, 2004).

National Writing Project – Professional development network of teachers designed to assist instructors in improving the teaching of writing in secondary classrooms (National Writing Project & Nagin, 2003).

Writing – Originating and creating a unique verbal construct that is graphically recorded (Emig, 1977).

Research Questions

The following research questions guided the study:

1. What are the selected characteristics of students enrolled in the Communicating Agriculture to the Public (AGCM 3103) course at Oklahoma State University during the fall semester of 2005?

2. What is the effect of a process writing model curriculum on student writing performance in an agricultural-context course, as measured by a writing assessment rubric?

3. Do students differ in their perceptions of writing in an agricultural-context course, based upon their participation in a process writing model curriculum?

4. Do students perceive teaching method and instructor style as affecting writing achievement in an agricultural-context communications course?

5.   Do students see the necessity for being able to write effectively in their

professional life upon graduation, based upon written feedback?

Null Hypotheses

The following null hypotheses guided this study:

$H_0 1$ There is no difference in writing skills between the two study groups as

measured by students' grades in the course.

$H_0 2$ There is no difference in writing skills between the two study groups on a

descriptive writing assignment as measured by the New SAT® Essay scoring guide.

$H_0 3$ There is no difference in writing skills between the two study groups on a

philosophy/profile writing assignment as measured by the New SAT® Essay scoring

guide.

Scope of the Study

The scope of this study was confined to students enrolled in a course section of

AGCM 3103 during the 2005 fall semester at Oklahoma State University. The total

number of students tested was 58 (N=58) with 30 control participants and 28 treatment

group participants.

Assumptions of the Study

The following assumptions were made concerning this study:

1.   The control group instructor did not teach different assignments to students

enrolled in the Communicating Agriculture to the Public course.

2.   The control group and treatment group instructors did not discuss the

experiment while it was in progress.

3. The treatment group instructor presented the process writing treatment lessons as they were developed by the researcher based on the literature review.

4. The treatment group instructor presented two pre-determined lessons following the process writing treatment.

5. Each student performed to the best of his or her ability on each assignment.

Delimitations of the Study

The study was delimited to 58 (N=58) students enrolled in the Communicating Agriculture to the Public course during the fall semester of 2005 at Oklahoma State University.

Limitations of the Study

The following were limitations of the study:

1. The researcher taught the treatment section of the course and had previously taught the course in its traditional manner. This may have affected the outcome of the process writing treatment and how it improved students' writing performance.

2. The process writing treatment itself has not been found as the premier method for teaching writing at the post-secondary level. While research does indicate it is effective, no research was found that concludes definitively it is the most effective method for improving students' ability to write at the college level.

3. The researcher conducted the qualitative interviews and served as the treatment instructor for the study and therefore may have unduly affected the findings reached because of students' desires to answer affirmatively.

Significance of the Study

The results of this study are significant in addressing how to improve the writing performance of students at the collegiate and university level. Writing movements of the past have focused on Writing Across the Curriculum and Writing in the Disciplines, yet today we are at a crossroads once again with students graduating from college without a significant grasp on effective writing. Universities across the nation recognize this shortcoming and are being forced to reconcile for not placing the appropriate emphasis on writing and the higher-order critical thinking skills writing fosters in students. Many top colleges across the country are revamping their writing courses, creating a "slew of new, required, topic-based courses" (Bartlett, 2003, p. 1). While this particular study places emphasis on a context-specific course, the results are applicable in all disciplines and fields of study. Improving the writing performance of students is a surmountable task, yet one that may be addressed through the provision of changing students' attitudes and perspectives on writing; it being truly a process, rather than a product never to be looked at again.

CHAPTER II

REVIEW OF LITERATURE

The review of literature section is divided into six separate areas that serve to provide background information about the topic and lay the groundwork for addressing each of the five research questions. The first section lays the theoretical groundwork for the study and establishes its significance. The second section examines the definition of writing and its role in academia. It also addresses the importance of writing in higher education as preparation for students' success in life. The third section looks at the Writing Across the Curriculum movement, the Writing in the Discipline movement, and the National Writing Project. It explores the role these three movements played in making writing a national priority in the U.S. educational system. The fourth section reviews the theory of writing as a process and addresses the steps necessary for students to undertake in process writing. In addition, it addresses the different approaches to learning and explores the relationship of how students learn, their attitudes and their success in writing. The fifth section examines the need for writing and the functionality of it in classrooms of higher education. The final section looks at the future and what it holds for writing on the college campus.

Theoretical Framework

Before writing in itself can be addressed, it is important to lay the theoretical framework serving as a basis for this study. Wiersma and Jurs (2005) defined a theory as

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a framework for conducting research, and it can be used for synthesizing and explaining (through generalizations) research results" (p.21). Thus the theoretical framework provides the researcher with a basis from which to begin, expand and explain processes or activities. Creswell (1994) grouped theories into three different types based on the theory's specificity or generality: grand theories, middle-range theories, and substantive theories. The theoretical framework proposed in this study is substantive in nature, and as such fulfills the criteria set forth by Creswell (1994): "Substantive theories offer explanations in a restricted setting and are limited in scope, often being expressed as propositions or hypotheses" (p. 4).

As a substantive theoretical frame for the study, the researcher supposes writing is beneficial to students in all aspects of life. Boscolo and Carotti (2003) stated, "Writing, like reading, is a cross-disciplinary ability which also 'serves' subjects other than language skills" (p. 198). Based on the literature that supports writing improving critical thinking skills, it can be assumed writing contributes to higher-order thinking and overall is effective as a learning tool. Reaves, Flowers, and Jewell (1993) lay the foundation for writing as a form of learning by stating, ". . . when students write, they process information in a physical, tangible form" (p. 34). This principle fits nicely with Bloom, Englehart, Furst, Hill and Krathwohl's (1956) definition of higher-order thinking: "analysis or understanding of the new situation, a background of knowledge of methods which could be readily utilized, and some facility in discerning the appropriate relations between previous experience and the new situation" (Whittington, 1995, p. 32). Furthermore, Wade and Tavris (1987) defined critical thinking as "the ability and willingness to assess claims and make objective judgments on the basis of well-suspected

reasons" (pp. 308-309). As such, it can be further assumed writing is a logical and effective mechanism for education as a whole. Emig (1997) pointed out that many notable psychologists imply writing plays a heuristic role in learning:

> Lev Vygotsky, A.R. Luria, and Jerome Bruner, for example, have all pointed out that higher cognitive functions, such as analysis and synthesis, seem to develop most fully only with the support system of verbal language—particularly, it seems, of written language (Vygotsky, 1962, as cited in Emig, 1977, p. 122).

Whittington (1995) addressed the necessity for promoting higher-order thinking skills in students, and it is logical to recognize the correlation between writing, critical thinking, and learning. To write, students must think, and to think, students must learn. Wade concluded, "Writing is an essential ingredient in critical thinking instruction" (1995, p. 24). Indeed, Murray (1973) advocated, "Writing with the language of words (or in mathematics with the language of figures) is the most precise and disciplined form of thinking" (p. 1235). Klein (1999) affirmed students who write frequently will at a minimum become better communicators, and at a higher level the activity of writing may assist students to "think critically and construct new knowledge" (p. 204). However, as is evidenced by the newfound push for improved writing performance of college graduates, writing to learn and fostering critical thinking skills is not always achieved in the classroom. A change is in order that will undeniably force students to write, think and learn in all classrooms and at all levels of the educational system. E.M. Forster summed it up well: "How do I know what I think till I see what I say?" (Brainy Quote).

Defining Writing and its Importance

While the origins of writing are debatable, it appears writing evolved from some form of conceptual reproduction (Christin, 2001). Christin (2001) claimed, "The emergence of writing depended upon the creation of fundamental concepts that made it possible to analyze the world and permitted self-expression" (p. 23). Archaeological evidence pointed to the Sumerians development of writing in 3200 or 3300 B.C. (Wilford, 1999). According to Wilford, this type of pictorial writing gradually evolved from the conceptual to abstract, but it was not until much later that it came to represent actual spoken language (1999). Following along roughly the same time line, the Egyptian hieroglyphics evolved, followed by a more widespread use of writing in the third millennium B.C. (Wilford, 1999). He stated writing was developed in southern Iran, as well as Pakistan, western India, Syria, Crete and parts of Turkey; this was followed by the development of writing in China toward the end of the second millennium B.C. Many scientists and scholars argue the first writings grew out of the recordings of economic information (Wilford, 1999). Regardless, writing as we know it today has been modified and perfected throughout the decades to meet societal needs. Today, as we become more of a digital society, some may blame the demise of writing on the Internet and e-mail. However, the fact remains writing is a permanent marker of information, and regardless of purpose, plays a large role in societal well being.

Dating back to the inception of the Writing Across the Curriculum and Writing in the Discipline movements, writing was defined in 1977 as, "Originating and creating a unique verbal construct that is graphically recorded" (Emig, p. 123). Interpreted loosely, this explains that writing involves more than merely putting words on paper; it is the

externalization of thoughts (Lavelle & Zuercher, 2001). Biggs (1988) further delineated

upon the definition claiming, "It is a complex activity involving attentional demands at

multiple levels: thematic, paragraph, sentence, grammatical and lexical" (p. 185).

Alamargot and Chanquoy (2001) declared writing involves choosing the most suitable

words for each idea proposed, following very rigorous grammatical guidelines, and using

proper punctuation to translate the linguistic relationships linking ideas. Thus, while the

process of writing is intricate, the significance of clear and cohesive writing is apparent.

The nonprofit organization Achieve (2004) reported the ability to write well has emerged

as an increasingly important skill in the 21st century. They further declared the skills

involved in writing help to prepare students for the real world, where it is imperative they

be able to write quickly and succinctly. However, reports on national education point out

the writing skills of the majority of high school graduates are less than proficient (Enders,

2001). In a study regarding state government, the College Board Report of the National

Commission on Writing for America's Families, Schools, and Colleges surmised, "In

today's technology-driven ecomony, more people than ever before are required to use the

written word, yet writing continues to be an undervalued discipline" (2005, p. 3). One

respondent in the study (College Board, 2005, p. 22) stated, "English composition seems

to have fallen off the list of things that count in college." This indicates higher education

may need to undertake the role of training students to write well. If institutions of higher

education are to train students to write proficiently, it is logical to assume they must come

to the university with basic skills intact. Yet, far too often many students come to college

lacking the basic academic skills needed to succeed. Grimes (1997) claimed under-

prepared students faced greater apprehension, lower completion rates, as well as greater attrition.

A survey (2004) of business professionals done by the College Board and the National Commission on Writing for America's Families, Schools, and Colleges found good writing is expected in today's professional world. The survey concluded, "Individual opportunity in the United States depends critically on the ability to present one's thoughts coherently, cogently, and persuasively on paper" (College Board, 2004, p. 5). In fact, Moss (1995) conducted a corporate study of chief executive officers, human resources managers, and directors of training and found respondents were generally dissatisfied with college graduates' communications skills. One respondent stated, "Our experience with college grads concerning communication has been poor. They cannot write, they cannot speak, and generally have poor communication skills" (p. 74). Studies such as this, among other factors, have led college instructors to include in their teaching pedagogy the enactment of discipline-specific writing in courses across the curriculum.

A 2003 published survey (Light) regarding the relationship between undergraduates' level of engagement and amount of writing for a course found, "Of all skills they want to strengthen, writing is mentioned three times more than any other" (p. 28). Light (2003) found overall students believe writing plays a central role in their academic and life success. The College Board's state government study (2005) found writing is indeed essential in state government, and arguably so with its nearly 2.7 million strong employee pool. The study indicated "the requirements for writing clarity, accuracy, and facility in moving along different audiences are even more demanding in state government than in corporate America" (p. 27).

The continuous need for improving writing remains apparent three decades after it was first highlighted with the 1975 *Newsweek* cover story highlighting the decline of writing instruction in the public school system and advocating for responding to this national crisis (Tchudi, 1986). While the *Newsweek* article indeed exaggerated the declining literacy of college students, it did serve to catapult writing to the forefront of American concern and led to the induction of several national writing movements that shaped how writing continues to be taught in institutions of higher education today.

Writing Movements

Three of the most recent, recognizable and significant writing endeavors at the secondary and post-secondary levels in the U.S. are Writing Across the Curriculum, the National Writing Project, and Writing in the Discipline. The first two movements began in the 1970s and the latter evolved in the mid-1980s. The Writing Across the Curriculum movement stemmed from the paradigm shift in writing theory in the late 1950s and early 1960s that moved writing from a product-oriented endeavor to a process-oriented undertaking (Stanley & Ambron, 1991). In contrast, the National Writing Project was a direct result of the perceived writing crisis experienced in the mid-1970s and called for a "back to basics" approach in American schools (National Writing Project & Nagin, 2003). The Writing in the Discipline focus evolved from the previous two movements and was linked with composition scholars who advocated student concentration in a specific field of study (Ochsner & Fowler, 2004). All three movements are significant in the focus now placed upon writing skills for students in the American educational system.

The earliest Writing Across the Curriculum faculty seminar was held at Central College in 1969-70 and another early program occurred in 1974 and 1975 at Carlton

College, which instituted the first faculty development workshops for Writing Across the Curriculum (Bazerman, Little, Bethel, Chavkin, Fouquette & Garufis, 2005). The idea took its roots, however, from the work of James Britton and others in England in the 1960s in their study of young children (Ochsner & Fowler, 2004). Britton used the theories of Piaget and Vygotsky to form the tenets of his argument that language was indeed a way of learning (Tchudi, 1986). Janet Emig (Tchudi, 1986) expanded upon this concept by advancing "the notion that writing is a unique mode of learning because it involves three patterns: enactive (learning by doing), *iconic* (learning through images), and symbolic (learning through representations)" (p. 15). Stanley and Ambron (1991) made the argument that faculty in all disciplines should, therefore, assist students with communication in writing because writing plays a central role in the learning process. They further stated the faculty workshops at Carlton ultimately led to a college-wide adherence for responsibility of writing. This in turn inspired other institutions to implement similar programs for faculty based upon a uniform pedagogical theory; resulting in the movement we see today that encompasses schools across America as well as abroad. Sorenson (1991) surmised that as a result of Writing Across the Curriculum, "Most students experienced less apprehension about writing and felt they were better writers – writing more varied, more complex, and more mature pieces – after only a year in a school-wide writing-across-the-curriculum project" (p. 2). Harris and Schaible (1997) stated, "Writing-intensive teaching methods may also improve student analytical skills" (p. 34). Using Writing Across the Curriculum can benefit students in profound manners, and even serve to encourage higher-order thinking skills (Harris & Schaible, 1997). They advocated the process involved in writing becomes "more complex than

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simply learning and repeating a set of facts" (p. 34). McLeod (1989) emphasized from the onset it is important to differentiate for educators in higher education that the program of Writing Across the Curriculum is more than merely adding more writing to all classrooms. She (McLeod, 1989) stated it is ". . . one that is closely tied with thinking and learning, one that will bring about changes in teaching as well as in student writing" (p. 343). Following closely behind this movement for teaching writing in all disciplines is the movement for improving the teaching of writing in U.S. secondary schools.

Whereas the Writing Across the Curriculum project addresses incorporating writing into all classrooms, the National Writing Project is a professional development network that began in 1973 at the University of California, Berkeley (National Writing Project & Nagin, 2003). The lengths to which the program reaches today extend to more than 175 sites in 50 states, Washington, D.C., Puerto Rico, and the U.S. Virgin Islands. Lieberman and Wood (2002) summarized that the National Writing Project helps teachers improve how they teach writing and fosters student learning through learning communities at the different sites across the country. They elaborated by declaring each site grows from a school-university partnership in which teachers attend a five-week invitational institute staffed by university and school-based personnel. Lieberman and Wood (2002) stated, "These opportunities to write and reflect with other teachers help create an ongoing social network of teachers that develops throughout the year" (p. 40).

The link between writing and learning established by Writing Across the Curriculum and the National Writing Project naturally led to context-specific writing in varying fields of study. Even though Writing Across the Curriculum had been widely used in schools since the mid-1980s, the National Assessment of Educational Progress

found there was little progress in improved writing performance during the past 25 years. The idea of writing in content areas expanded to become not only a method for teaching writing, but also a means of improving student education (Tchudi, 1986). Tchudi (1986) stated, "The college student who writes in the content fields will not only be a better writer, but a better thinker, a more liberally educated man or woman" (p. 16). While proponents of Writing in the Discipline emphasize the effectiveness of writing in a context-specific area cannot only improve writing, but education overall, the available literature has not emphatically garnered research data to substantiate this logical claim. Johnson and Holcombe (1993) recommended "writing tasks be integrated throughout the curriculum in order to promote higher level thinking skills" (p. 155). Therefore, the challenge for proponents of writing is to find the appropriate technique for teaching writing that facilitates both overall educational learning and improved writing performance of students.

The Writing Across the Curriculum, National Writing Project, and Writing in the Discipline endeavors strive to improve the writing of students in America, yet each approaches the task in a different manner. These writing movements that began more than three decades ago still hold true today as we encounter the same concerns of insufficient student writing skills. However, today the spotlight shines more prominently on higher education and its role in the process of preparing graduates for the workplace. The U.S. Department of Education's National Center for Education Statistics (p. 70, as cited in the National Writing Project & Nagin, 2003) asserted:

> Effective writing skills are important in all stages of life from early education
>
> to future employment. In the business world, as well as in school, students

must convey complex ideas and information in a clear, succinct manner.

Inadequate writing skills, therefore, could inhibit achievement across the

curriculum and in future careers, while proficient writing skills help students

convey ideas, deliver instructions, analyze information, and motivate others (p. 3).

While it is abundantly clear that writing matters, the dilemma as to how to most

effectively make students proficient writers is something we are still tackling today.

Sublett (1993) noted, "A lifetime of professional writing faces many students who we

annually launch from our colleges and universities into the world of work. Too many

students leave the campus unprepared for this critical aspect of their careers" (p. 11).

Writing in Agriculture

As is evidenced by the literature applauding the necessity of strong writing skills

by students upon entrance into the workplace, the value of sound writing in particular

disciplines is likewise significant. Cobia (1986) confirmed that an inability to

communicate is indeed one of the most important factors agricultural graduates have to

contend with. However, he acknowledged (Cobia, 1986) this dilemma is not confined to

agriculture alone and "seems to be fairly general regardless of discipline or geographic

region" (p. 22). Cobia (1986) stated there are three substantial reasons for integrating

writing into agricultural courses. First, writing takes on a different perspective in different

fields of study; therefore, students must learn to write proficiently within their particular

context. Secondly, students naturally will be predisposed to taking writing more seriously

when they can see the necessity and applicability of it within their chosen profession, and

finally, as the literature affirms, writing augments the learning process across all subject

areas.

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As in any field of study, students in agriculture must be able to get their point across, whether it is in oral or written form. In training students to be prepared, Kastman and Booker (1998) avowed that writing across the curriculum in agriculture, similarly to other disciplines, is not only a valuable learning activity, but also one that transcends the college campus and benefits individuals in the workplace. A study conducted in 1960 (Simonds) reported that in a survey of upper-level managers, approximately 80% stated writing as the most frequently used skill developed in college, thereby making the case that today in agriculture and nearly all other professions, writing is indeed important. Like many teachers and instructors at both the secondary and post-secondary levels, Kastman and Booker (1998) stated agriculture teachers are increasing the amount of writing in their classrooms so they more closely resemble that which graduates will face in the workplace. In fact, Scanlon and Baxter (1993) recommended, "Courses offered in the College of Agricultural Sciences should emphasize writing's importance in a student's career by expanding writing activities and instruction in content area courses" (p. 10). In two context-specific case studies by Coker and Scarboro (1990), they found increasing writing in an upper-division context course allowed students to learn more. "It reinforces the idea of students gaining greater control over their own learning, changing from passive recipients to active producers of knowledge" (p. 222).

Incorporating writing into the classroom, whether that is primary, secondary or post-secondary, has risen to the surface as an essential attribute for employees in all fields of the job market today. Just as Aaron (1996) implied that animal science teachers at the college level are preparing the next generation of leaders for animal agriculture, agricultural faculty at the post-secondary level are indeed preparing tomorrow's leaders

in agriculture. In a study using writing to promote thinking in a first year agriculture course, Roberts-Nkrumah (2005) found that to improve thinking of students, they must be first convinced writing was thinking and it was indeed a process. Teaching students sufficient writing skills is a task faced by teachers at all educational levels and one that reaches far beyond writing alone to incorporate critical thinking and subject matter comprehension. Harris and Schaible (1997) stated writing within a subject matter indeed assists students in addressing life:

> As students write within a subject matter and learn to analyze an argument, they discover how the argument is constructed and become familiar with how "experts" in various disciplines think and communicate. Students gain access to intra-discipline conflicts and consider fundamental issues around the nature, uses, and abuses of authority. This process is considerably more complex than simply learning and repeating a set of facts. Indeed, this process exposes students to the sorts of higher-order thinking skills that prepare them to critique their world and to formulate solutions to complex problems (p. 34).

Writing Development

Learning to write is typically learned, practiced, and perfected through elementary, secondary, and even post-secondary education. While the age level of when to teach children to write has shifted over the years, it has emerged to encompass more than mere penmanship (Applebee, 2000). The most recent and extensive assessment of writing in secondary schools came in 1988 with the National Study of Writing in the Secondary School, funded by the National Institute of Education (Applebee, 1984). Applebee stated, "In general, the study found that writing activities were limited in both

scope and frequency" (1984, p. 589). As a result of this pivotal study and others, Applebee (1984) concluded:

Studies of the nature of instruction make it clear that school writing tasks are, on the whole, extremely limited and unrewarding. Although simply increasing the amount of writing that students are expected to do would seem worthwhile, it is unclear that this would necessarily lead to a major change in the types of knowledge – and the levels of reasoning – that are important (p. 591).

In discussing writing development in education, Applebee (2000) summarized that almost all can be "roughly categorized as emphasizing purposes for writing, fluency and writing conventions, the structure of the final product, or strategic product – each of which applies a different emphasis in curriculum assessment" (p. 92).

Writing is undoubtedly a difficult and tedious product to teach and assess, whether at the secondary or post-secondary level. It is, however, integral to education and learning, and as such must be taught. As a testament to its significance, the SAT® has recently added a new essay section to the standardized test required for entry into most national colleges or universities. Carol Jago (as cited in Manzo, 2005), a California High School English teacher, stated, "I think it will impact the curriculum in a good way, because it will put more of a focus on writing, particularly expository writing" (p. 17). Applebee (2000) advocated [writing development]:

It is confounded with language development and more generally, as well as with the development of content knowledge in particular domains. (Even the best writers will write unsuccessfully in a completely unfamiliar domain.) Indeed, performance on most of the components of writing achievement varies with topic

and type of writing: vocabulary, syntactical patterns, fluency, patterns of errors,

organizing structures, and even writing processes will all vary from one topic of

type of writing to another (p. 103).

Thus, while multiple considerations must be taken into account with writing instruction,

that which challenges students ultimately to reason and think is far above that which only

asks students to regurgitate information or summarize materials.

<center>Process Writing</center>

There are arguably many different approaches to teaching writing; Vanessa

Steele (n.d.) argued that one method is not necessarily right, while the others are wrong.

However, as a result of the emphasis placed on writing, researchers have now developed

a consensus on the most effective approach to writing instruction (Unger & Fleischman,

2004). Flowers and Hayes (1981) termed this method as process writing and developed it

as a result of a study that looked at the steps accomplished writers used as they wrote (as

cited in Unger & Fleischman, 2004). The original 1980 Flowers and Hayes model of

process writing dealt with cognitive processes and consisted roughly of three parts: the

task environment, the cognitive processes involved in writing, and the writer's long-term

memory (Hayes, 2000). Hayes (2000) stated the task environment is in essence

everything that lies beyond the writer's control, the cognitive processes include planning,

translating, and revising, and the writer's long-term memory component includes

knowledge of topic and audience. Flowers and Hayes (Unger & Fleischman, 2004)

identified the process as "planning and organizing ideas, translating ideas into text, and

revising the result" (p. 90). "Most research today supports the view that writing is

recursive, that it does not proceed linearly but instead cycles and recycles through

<center>23</center>

subprocesses" (National Writing Project and Nagin, 2003, p. 25). What has resulted from Flower and Hayes' (Unger & Fleischman, 2004) research of process writing is a "set of instructional guidelines for five stages of the writing process: (1) engaging in prewriting tasks; (2) creating an initial draft; (3) revising the text; (4) editing for conventions; and (5) publishing or presenting a polished final draft" (p. 90).

Since the original model's inception some 25 years ago, Hayes (2000) has proposed a revision of the process writing model that entails only two major elements: the task environment and the individual. He stated the task environment consists of social and physical components, while the individual entails motivation and affect, cognitive processes, and both short-term and long-term memory. Hayes' surmised there are four main differences between the original model and his newly revised model (2000). His new model stresses a writer's working memory, as well as the need for a writer to comprehend and understand both visual-spatial representations and linguistic representations. In addition, Hayes also stressed the role of both motivation and affect in writing. And finally, he reorganized the cognitive section of the model to include the sections of text interpretation, reflection, and text production. While these recent changes represent changes in focus, the writing process model as a whole still can be grouped under the original three tenets of planning and organizing ideas, translating ideas into text, and revising the end result (Hayes, 2000).

In a report on academic writing research prepared by the Sylvan Research Center (2005), Sylvan concluded, "It is safe to say that almost all English classes, even those in the youngest grades, have come to incorporate the steps (and even usually the exact terms for) the Writing Process: *prewriting, drafting, revising, editing and publishing"* (Mitchell

& Bavaria, 2005, p. 1). According to Steele (n.d.), a process approach to writing places more emphasis on activities that "promote the development of language use; brainstorming, group discussion, rewriting" (p. 1). Indeed, many language-based organizations endorse the process writing approach. The Great Source Education Group (n.d.) advocated "The National Council of Teachers of English, the International Reading Association, and most state standards have adopted the process writing approach as the recommended way of teaching writing . . ." (p. 1). Bruffee (1983) and Faigley (1985) agreed and stated teachers have transformed classrooms into learning communities, with the focus of writing having progressed from written products to process writing, and as ways of making knowledge obtainable have evolved into a collaborative or social perspective.

Jolene Borgese with the Great Source Education Group (n.d.) stated, "Explicitly teaching each step in the writing process helps struggling writers see that good writing is a result of effort and can be improved with practice" (p. 1). Borgese further stated process writing allows writing to be achievable for all students, and in addition can help to defy the fear factor faced by many struggling writers (Great Source Education Group, n.d.). Stanley (n.d.) stated:

> The process approach treats all writing as a creative act which requires time and positive feedback to be done well. In process writing, the teacher moves away from being someone who sets students' writing topic and receives the finished product for correction without any intervention in the writing process itself (p. 1).

While it undoubtedly requires additional classroom time be spent on writing, it allows feedback before the final product, and research has shown that feedback is most useful

between drafts and does little to improve student writing after the product has been turned in for a grade (Stanley). Murray (1973) equated the writing process to that used by writers:

> The teacher and the students must understand that writing is a process of discovery. This process can be identified by a close study of how publishing writers in all genres write most of the time. They do not follow an absolute and rigid procedure; their writing is flexible, varying according to the writer and the writing task, but the process can be revealed to students and practiced by them (p. 1236).

Whirry (1999), in her *Statement on the NAEP 1998 Writing Report Card*, stated writing is a skill and is not something that can be learned and perfected overnight. In fact, research by the National Assessment of Educational Programs, points to writing being a recursive process. The writing process is actually very chaotic; it does not move from one point to the next sequentially; it moves through stages (Hairston, 1982). "The mature writer rethinks ideas throughout the process of writing. Through pre-writing, drafting, responding to peers, and drafting again, the writer's thoughts are clarified, organized, and perfected" (Whirry, 1999, p. 2). In Furneaux's (Johnson & Johnson,1998) explanation of process writing she offered a model to ascribe to and stated, "White and Arndt's diagram offers teachers a framework which tries to capture the recursive, not linear, nature of writing" (p. 3) (Figure 1.).

Hill (1992) advocated encouraging the principles of process writing as one of three issues crucial to improving instructional practices in writing. As a part of the process writing approach, revision is perhaps the key that may unlock the learning

potential for students. Lehr (1995) defined it as "the heart of the writing process—the means by which ideas emerge and evolve and meanings are clarified" (p. 1). In addition,
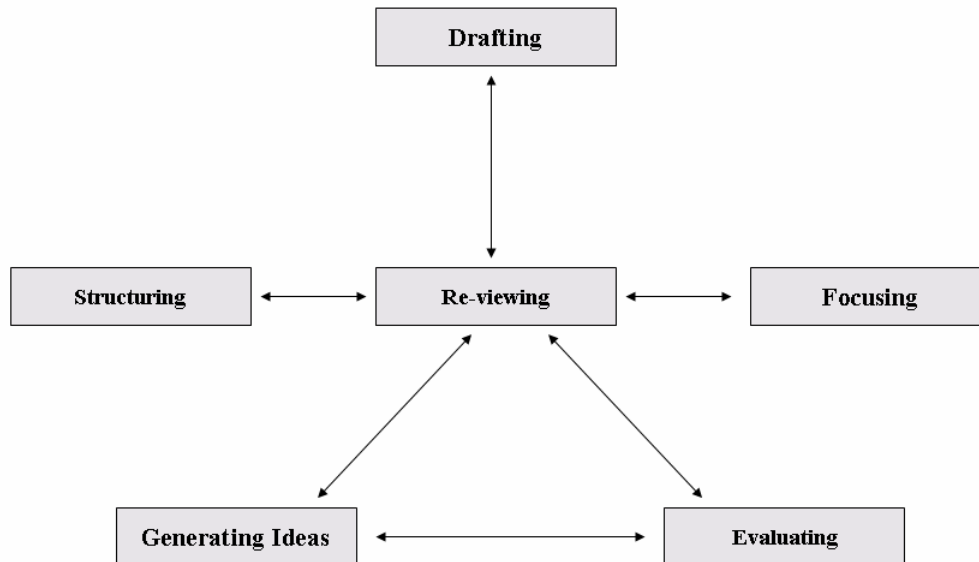
Figure 1. White and Arndt's (1991) diagram of process writing (arrows added).

Flower (1994) stated, "Reflection is of great importance in the social cognitive view of the writing process because it is where writers gain control over their own writing and reading processes" (p. 233). Sensenbaugh (1990) summarized by stating if learning is to be accomplished through writing, the purpose of writing must change. The purpose should not be to summarize, but rather "to encourage the students to interact with each other and with their own ideas," thereby allowing the process writing approach to enable both teachers and students to focus on writing to learn (Sensenbaugh, 1990, p. 382). Allowing for feedback is indeed one of the cornerstones of process writing. In a 2001

Harvard Study of Undergraduate Writing, Study Director Nancy Sommers (as cited in Harris, P., 2005) advocated:

> I think that the opportunity to get feedback on your writing is something very unusual about writing that gives it a societal role . . . . It is the most direct way that students interact with their college. Students in our study would say the writing process is incomplete without the feedback (p. 2).

In discussing the benefits of process writing, it is beneficial to differentiate between the two most commonly held beliefs about the purposes of writing as a whole. These goals can be defined as writing to demonstrate learning and simply writing for learning (Elbow, 1994). Elbow conceptualized these differences by terming the two high stakes and low stakes writing, respectively. Elbow stated in low stakes writing, "The goal isn't so much good writing as coming to learn, understand, remember, and figure out what you don't yet know" (1994, p. 1). Kalman and Kalman (1998) affirmed this belief, noting "Writing to learn and learning to write allows exploration of the student's own doubts, gaps in knowledge, and gropings for the answer" (p. 1). Just as professional writers seldom write one draft only of an essay, novel, or the like, students too must understand writing is indeed a process that requires a significant investment of time.

In the spring of 1996, the National Center for Education Statistics stated evidence was present that suggested process writing was associated with higher average writing proficiency among students in elementary and secondary schools across the nation (Goldstein & Carr, 1996). This approach grew in popularity across time and as testimony to the process writing approach and its firm place in the U.S. educational system, the National Assessment of Educational Progress administered a test of writing to large

national samples of students (Unger & Fleischman, 2004). They reported (2004) those students who engage in the process writing approach score higher on the test. Unger and Fleischman (2004) concluded, "By focusing attention on an area of instruction that has often been overlooked, the process writing approach has had a significant impact on U.S. education" (p. 92). Goldstein and Carr (1996) stated while process writing does indeed seem to lead to higher performance for students who use its techniques, writing is an individual activity and some students may fare better with the approach than others, and higher performance does not necessarily indicate better writing.

Approaches to Writing

Process writing indeed has made an impact, but this is not to say it is a fool-proof method for teaching writing or that engagement in it alone makes a proficient writer. Biggs (1988) stated writing strategies serve as a connection between the writer and the written product, with some being more effective than others depending on the student, the nature of the writing, and the learning environment. Biggs (1988) and Lavelle (1993) developed the approaches to writing model that "brings a relational perspective to understanding writing by accounting for the dynamic impact of writers' beliefs and motives on writing strategies and outcomes" (Lavelle, Smith and O'Ryan, 2002, p. 400). The model looks at two different approaches students often take when writing: the deep approach and the surface approach. Biggs (2003) distinguished between the two approaches as a deep approach being based on active and meaningful involvement in the alteration of information, and the surface approach as having the goal of simply completing the writing. These differences in approaches to learning are likely to

influence a student's success in writing, as well as his or her overall attitude toward the process.

Students who use the deep approach are generally those who feel a prescribed need to know and automatically focus on underlying concepts and themes (Biggs, 2003). Biggs characterized these deep learners by stating they are the students who enjoy learning and possess a genuine interest. On the opposite end of the spectrum are surface learners. These students typically do not garner joy in learning and see it as a task (Biggs, 2003). Contrastingly, surface learners merely take information at its base value and choose to not delve deeper. Biggs (2003) summarized the relationship between students' approaches to learning and teaching as, "surface and deep approaches to learning are not personality traits, as is sometimes thought, but are most usefully thought of as reactions to the teaching environment. Good teaching supports the deep approach and discourages the surface . . ." (p. 31). Writing is a reflective activity, and therefore, the approaches students adhere to in accomplishing writing must be considered as to how they relate attitudinally and in overriding effectiveness. While approaches to writing are indeed significant, so too are the differences in expectations found between high school and college teachers.

A 2000 study by ACT Inc. found high school and college teachers had differing views on what parts of writing were important for students to know. While college teachers expected basic skills like grammar to be known, high school teachers stressed organization of ideas in writing (ACT Newsroom, 2000). Cynthia Schmeiser stated, "Educators obviously need to communicate their differences to one another if we're to help college-bound students cross the 'preparation-gap'" (ACT, 2000, p. 1).

Ernest Boyer (1983), then president of the Carnegie Foundation for the

Advancement of Teaching, summed up the importance of writing and its link to thinking

by stating:

> Clear writing leads to clear thinking; clear thinking is the basis for clear writing.
>
> Perhaps more than any other form of communication, writing holds us responsible
>
> for our words and ultimately makes us more thoughtful human beings (p. 90).

Writing Apprehension

Research indicates attitude and performance are closely related (Pajares, 2003).

Attitude toward subject matter definitively affects perception and with writing in

particular, self-confidence is a critical element. Boscolo and Carotti (2003) affirmed the

importance of attitude:

> Recent motivational research has shown that students' attitude to a discipline – in
>
> this case writing – is not only a matter of liking, interest, or engagement. It is a
>
> pattern of interrelated components including beliefs, expectations, outcomes of
>
> previous successes or failures, which determine the way a student approaches a
>
> specific subject (p. 218).

According to Pajares (2003), "Judgments of personal efficacy affect what students do by

influencing the choices they make, the effort they expend, the persistence and

perseverance they exert when obstacles arise, and the thought patterns and emotional

reactions they experience" (p. 140). Students who possess anxiety toward writing may

unconsciously influence their success in writing. Like many other learned skills, students

often fear inadequacy will be discovered in writing when they are actually forced to write

something; yet, writing is simply not a skill that can be avoided (Great Source Education Group, n.d.). Daly (1978) labeled writing apprehension as:

Conceived with a person's general tendencies to approach or avoid situations perceived to demand writing accompanied by some amount of evaluation. The highly apprehensive individual finds writing unrewarding. Consequently, he or she will avoid, if possible, situations where writing is perceived as required. Further, when unavoidably placed in such situations, he or she will experience more than normal amounts of anxiety (p.10).

Knudson (1995) concurred that because apprehension or anxiety of writing negatively affects student attitudes, the link between the two plays a major role in decisions made academically and occupationally. In 1975, Daly and Miller found mature college students who may not like to write, in turn may avoid writing, thereby leading them to elude careers that involve writing as well. Therefore, Knudson (1995) concluded writing anxiety can effect school success and ultimately career success, thus exploration of attitudes toward writing should be undertaken.

Van Rossum and Schenk (1984) asserted learning outcomes are affected by students' beliefs. While Biggs' paradigm differentiates between a student's quest for learning by dividing students into surface and deep learner categories, he further expands upon the approach by including motivational factors and students' level of focus. Biggs (1987) reasoned motivational factors juxtaposed with study habits are linked to the learning outcome. Lavelle and Zuercher (2001) emphasized learning approaches cannot be used to define students:

Thus, approaches are not consistent personal differences, as stylistic models

such as those of Kolb and Schmeck would suggest, nor are they entirely

determined by context. Rather, approaches represent an interaction between the

learner and the situation of learning with strategies serving as a negotiating link

leading to task outcomes (p. 375).

Thus providing support for the idea that attitude and success are juxtaposed in the

learning process and should be linked in academia. Lavelle and Zuercher (2001) noted,

"the key to facilitating writing at the university level is found in designing a high quality

writing climate to include deep tasks, emphasis on revision and meaning, scaffolding,

modeling, and integrating writing across content areas (relevance)" (p. 384). Kear,

Coffman, McKenna, and Ambrosio (2000) stated, "If we are more knowledgeable about

students' attitudes toward writing, then our instructional practices can potentially benefit

from this new information" (p. 1).

Need for Writing

While writing at one time was taught strictly in the English classroom, Writing

Across the Curriculum, the National Writing Project, and Writing in the Discipline have

changed all of this. The National Writing Project and Nagin (2003) reported, "It is

striking how other disciplines have begun to incorporate research on the composition

process into their own teaching strategies" (p. 25). Writing plays a crucial role in all

fields of study, and this has been affirmed by the addition of writing on standardized

tests. "It is an independent category in state and national standards and is assessed on

state, national, and international achievement tests" (Unger & Fleischman, 2004, p. 90).

Many faculty have begun to adopt the Writing Across the Curriculum philosophy into

their own disciplines (Stanley & Ambron, 1991) and declare "writing initiates students in

to the modes of discourse in their disciplines" (p. 51). This should not be mistaken for meaning that writing is a generic skill, applicable in any classroom. Spear, McGrath, and Seymour (as cited in Stanley & Ambron, 1991) made the argument:

> If writing is really to count in the classroom, it must be because the intellectual structure of the classroom and the discipline demand it and because writing partly forms the intellectual structure of that classroom and that discipline. Insisting on a generic justification for writing leads to the detachment of reading and writing from the norms and practices of particular disciplines . . . (p. 51).

Writing can evoke learning in core subjects, and it is, therefore, vital it be included in classrooms where its merits are valued and recognized by students and teachers alike (National Writing Project & Nagin, 2003). Students need to come to understand the link between learning and writing. Paul and Elder (2005) qualified this by stating, " . . . One cannot be a skilled thinker and a poor writer. It is, therefore, important students connect the development of intellectual discipline through writing with the ability to learn at deeper and deeper levels" (p. 41). Ridgley (2003) stated, "*The Chronicle of Higher Education* recently discovered something parents have known for at least the past 15 years—America's universities don't teach college kids how to write . . . at least, not how to write very well" (p.1). Ridgley placed the blame entirely with universities alone (2003). He confirmed his belief by documenting the radical shifts in writing instruction beginning to take place at prestigious universities across the nation such as Duke University (2003).

The National Commission on Writing in America's Schools and Colleges (Elevate writing instruction, 2003) documented the necessity for writing: "On federal

writing tests, only one of four students ranked as 'proficient.' About 17% of college

freshmen require remedial writing classes: College officials say writing tops the list of

the $1 billion a year they spend on remedial courses" (p. 4). The commission summarized

the need for writing across disciplines by declaring that if education in America is to

reach its fullest potential, a writing revolution must take place that yields to the power of

language and communication and assigns it its proper place in the classroom (College

Board, 2003).

<div align="center">Future of Writing</div>

Just as universities and colleges face enormous pressures and institutional

demands, students today are facing new challenges in terms of what transferable skills

and abilities they must possess to succeed in life. Paige (*The Corporate Citizen*, 2004)

stated America invests more than any country except Switzerland in education, yet our

students rank as merely average when compared to those in other industrialized countries.

Additionally, Paige suggested our students are not prepared for the challenges they will

face in a global marketplace. Parks and Goldblatt (2000) contended many students

incorrectly assume they are striving to master vocational training in preparation for a job,

when in fact they must "learn abilities that will sustain them through multiple career

changes, new roles in marriage and community life, and forbidding political crises in the

environment, economy, and social justice" (p. 586). This outlook paves the way for

moving writing from merely *across* disciplines, and suggests moving it *beyond* the

curriculum.

The National Commission on Writing in America's Schools suggested that while

writing has taken a backseat to other skills learned in the classroom, it is not to say that

American students cannot write, they simply cannot write well (College Board, 2003). Stowers and Barker (2003) made this case by claiming that while effective writing skills can propel students in their careers, poor writing skills play a direct role in limiting their chances for success. Renewed emphasis must be placed on writing if we are to ensure today's students succeed in an increasingly competitive and global marketplace. The National Commission on Writing for America's Families, Schools, and Colleges found in a recent study that unless we devote attention to the development of such skills as writing, the U.S is but condemning many students to low-wage, hourly employment (College Board, 2004). Additionally, former Virginia Governor Mark Warner confirmed the imparity of writing (College Board, 2005) in his statement to the 2005 National Commission on Writing Report addressing state government:

> This survey confirms what governors and educators already know: strong writing skills, and the critical thinking skills associated with the ability to write well, are important prerequisites for success in college and work. The next generation of workers needs strong communication skills to compete for the best jobs in a global economy (p. 2).

Indeed, as many universities are taking heed, writing courses at the undergraduate level must be restructured to emphasize the need for clear and concise writing. Eric Schneider of the University of Pennsylvania (Bartlett, 2003) stated, "Writing is the edifice on which the rest of education rests. If we don't do that well, you have to wonder what we do well" (p. 6-7).

If knowledge is power, then writing is knowledge. If students can convey their thoughts effectively on paper, there is no limit to what they can accomplish. Abraham Lincoln (College Board, 2004) captured this notion long ago:

> Writing – the art of communicating thoughts to the mind – is the great invention of the world…Great, very great, in enabling us to converse with the dead, the absent, and the unborn, at all distances of time and space, and great not only in its direct benefits, but its great help to all other inventions (p. 36).

Summary

The literature is abundant with evidence that points to writing being an imperative component of classrooms from K-16. It is important to understand the writing movements of Writing Across the Curriculum, the National Writing Project, and Writing in the Discipline as they relate to the emphasis placed on writing in the American educational system. As a result of numerous investigations, researchers have concluded process writing offers the most logical and efficient way to address the teaching of writing in the classroom. In addition, the literature supports the notion that writing far transcends its historical place in the English classroom and is appropriate in any and all courses where learning takes place. Students most often approach learning (and writing) in two divergent manners, as surface learners and as deep learners. The distinction lies within what the student hopes to gain from the experience. Most recently, the College Board embarked on two benchmark studies that indicated writing remains to be entrenched in the classroom today, and if students are to succeed they must win the battle of being able to write well. Author Tamra Orr (2003) summed up the imparity of writing:

There isn't a job you will have in your life that won't involve the art of communicating clearly. Even if you aren't going to be an author or a journalist, it doesn't mean you get an automatic pass out of English class. The lessons you learn there aren't ones you will leave behind—they are the ones you will access almost every day of your life, whatever path you choose to follow (p.1).

CHAPTER III

METHODOLOGY

Chapter I discussed the importance of writing for students and employees alike in today's society. It addressed the need for improving the writing performance of students based on industry expectations and desires for college graduates. The purpose of this study was to examine the writing skills of students enrolled in an agricultural writing course and determine if the use of a process writing model used in an agricultural-context course improved students' writing ability. The assumption was that students who were taught the course using a process writing model curriculum would improve their writing performance more than students taught the material in the traditional manner. The methodology for this study was adapted from a study completed in a secondary English classroom (Carney, 1996). The study addressed the following research questions:

1. What is the effect of a process writing curriculum on student writing performance in an agricultural-context course, as measured by a writing assessment rubric?

2. What are the selected characteristics of students enrolled in the Communicating Agriculture to the Public (AGCM 3103) course at Oklahoma State University during the fall semester of 2005?

3. Do students differ in their perceptions of writing in an agricultural-context course, based upon their participation in a process writing curriculum?

4. Do students perceive teaching method and instructor style as affecting writing achievement in an agricultural-context communications course?

5. Do students see the necessity for being able to write effectively in their professional life upon graduation, based upon written feedback?

Chapter II provided a theoretical framework for research on writing and how it is taught at the secondary and post-secondary levels. It specifically addressed the history and importance of writing, the three most recent and recognizable writing movements, teaching writing as a process, the need for writing, and the future of writing.

In this chapter, the methods and procedures used to answer the stated research questions are addressed. The chapter identifies the IRB approval for the study, the population, the research design, instrumentation, validity, reliability, data collection, and data analyses used in the study.

Institutional Review Board

It is required by Oklahoma State University policy and federal regulations that a review be conducted and approval granted for research studies involving the use of human beings before researchers can begin investigation. In accordance with institutional policy, the office of University Research and the Institutional Review Board at Oklahoma State University conducted a review of this research study to protect the rights and welfare of human subjects involved in biomedical and behavioral research. As such, this study received examination and was granted permission for execution. The institutional

review board code for this study was AG0550. A copy of the approval form is presented in Appendix A.

Context of the Study

The study took place in the context of one section of the three-hour credit Communicating Agriculture to the Public (AGCM 3103) course offered in the 2005 fall semester. The section enrollment was set at 60 students, and the students were randomly assigned to the control or treatment groups. The section was offered during the Monday, Wednesday, Friday time slot at 12:30 p.m., and was a 50-minute class period. The control group (n = 30) was taught by an instructor who had previously taught the course in its current format during the pilot study, and the treatment group (n = 28) was taught by the researcher who had previously taught the course in its current format, but only employed the process writing model curriculum during the pilot study. The treatment group instructor employed a process writing model curriculum as the treatment for the study. (Appendix B)

The process writing model curriculum (Appendix B) was used on two of the writing assignments for the course. The two assignments used were a descriptive writing essay and a personal profile/philosophy statement. Both assignments were expository in nature and possessed the same guidelines: two to three pages in length, Times New Roman font, double spaced, and a cover page containing the student's name, assignment title, and date.

The students were not made aware of the difference between the control and treatment groups of the section and were asked to sign an informed consent form on the first day of class (Appendix C). Students were told their involvement in the study was

strictly voluntary, but all 58 students consented to participation. Both the control and treatment instructor made certain the exact same material was being taught in both groups, with the only difference being the employment of the process writing model curriculum with the treatment group. Upon completion of the course, students were given a debriefing document (Appendix D) explaining in greater detail what the study entailed and how their participation would be used. The debriefing document was given to students after they completed the course final exam on December 14, 2005.

Two classrooms were used to facilitate the control and treatment groups. The classrooms were located on the second floor of the Agricultural Hall building and were mirror images of one another. Both classrooms offered stadium seating, multi-media capabilities and were capable of seating a maximum of 63 students according to the Registrar's Office.

<div align="center">Research Design</div>

The study employed a post-test only control group design (Campbell & Stanley, 1963) with one treatment group and one control group. Each student was randomly assigned to either the control or treatment group, with the "unit of analysis" being by student. The control section of the course was traditionally taught and did not involve any new or different adjustments to the syllabus (Appendix E) that might affect the writing outcome of the students. The treatment group employed a process writing model curriculum and the syllabus (Appendix F) was adjusted accordingly to compensate for the additional time needed to employ the treatment. In addition to the random assignment to groups, a pre-measure was given to the two groups (control and treatment) to determine level of equivalence concerning basic writing aptitude (Campbell & Stanley, 1963).

Comparisons were made between group means on each of the post-test measures

following the administration of the treatment. The research design is described below in

Figure 2.

Figure 2

Post-test Only Research Design (Campbell & Stanley, 1963)

Control	R	_____	O_D	O_P
Treatment	R	X	O_D	O_P

Figure 2: Creswell (2005) post-test only design: R = random assignment, O_D =
descriptive writing post-test measure, O_P = profile/philosophy writing post-test measure,
and X = treatment.

According to Bryman (2004) and Creswell (2005), true experimental designs are

the strongest and most rigorous of experimental research designs because they equate

groups through random assignment. Additionally, threats to internal validity are

minimized due to randomization, and external validity threats are reduced through the use

of a post-test only design without the inclusion of a pre-test (Creswell, 2005). Table 1

outlines proposed threats to internal and external validity in experimental design (Cook &

Campbell, 1979; Bracht & Glass, 1968). Prevention methods for the internal and external

validity threats to the study are outlined in Table 1 as well.

A panel of experts (Appendix G) reviewed the quantitative writing assessment

rubric used as the instrument in this study. The panel of experts consisted of three faculty

members in the Department of Agricultural Education, Communications and 4-H Youth

Development at Oklahoma State University, specifically having expertise in the area of

agricultural communications. The panel consisted of two females and one male, in an

effort to avoid gender-bias in scoring the artifacts. The panel used the New SAT® Essay

Table 1

Proposed Threats to Validity and Prevention Methods

Internal Validity	**Control**
History	Because there is a control group, effects in time would exist for both the control and treatment group.
Maturation	Treatment occurred over a relatively short period of time; one semester.
Testing	This design uses no pretest; therefore, participants did not become "test-wise."
Differential Selection	Random assignment of participants to the control and treatment group was used.
Experimental Mortality/ Attrition	Participants were college students.
Treatment Diffusion	Instructors did not discuss the treatment with either group; therefore, participants were only aware of their assigned treatment.
Compensatory Rivalry	Instructors did not discuss the treatment with either group; therefore, participants were only aware of their assigned treatment.
External Validity	**Control**
Hawthorne Effect	The participants were not aware of the research hypotheses.
Experimenter Effect	The treatment succinctly followed the process writing model curriculum, as described in the literature.
Pretest Sensitization	A pretest was not administered.
Post-test Sensitization	Three unrelated and separate post-tests were used in the analysis.

scoring guide (Appendix H) developed by the Educational Testing Service for the New

SAT® Essay. The panel found the instrument to be valid for this study.

A pilot study was conducted on the process writing model curriculum during the

2005 Summer Session III at Oklahoma State University. The section enrollment was set

at 60 students, and the students were randomly assigned to the control or treatment group.

The section was offered during Monday, Tuesday, Wednesday, and Thursday from 8:40 – 11:10 a.m.. The control group (n = 10) was taught by an instructor who had not previously taught the course in its current format, and the treatment group (n = 9) was taught by the researcher who had previously taught the course in its current format, but not employing the process writing model curriculum. The treatment group instructor employed a process writing model curriculum as the treatment for the study.

The instructors teaching the control and treatment groups of the study differed in several aspects. The control instructor had never taught the course before, whereas the treatment instructor had several years experience teaching the course. Additionally, the two instructors differed slightly in type and knowledge of experience for teaching the course. However, both instructors were female with a background in the agricultural communications profession.

The control instructor was an associate professor in agricultural communications in the Department of Agricultural Education, Communications and 4-H Youth Development at Oklahoma State University. She had a background in agricultural communications, having worked in the industry for several years, as well as teaching at the college level for 14 years. The control instructor had not taught the writing-intensive course in its current format and was accustomed to teaching discipline-specific coursework to agricultural communications students. She taught the course as designed and modified by the researcher.

The treatment instructor was a doctoral student employed as a graduate teaching associate within the Department of Agricultural Education, Communications and 4-H Youth Development at Oklahoma State University. She worked for approximately nine

years in the agricultural industry in Texas before beginning work on her doctorate and returning to teaching at the college level. At the time the study was conducted she had previously taught the course for four semesters. Her previous teaching of the course was limited to teaching in the traditional manner, where students were given assignments, the assignments graded and then returned to the students. Feedback, assistance with coursework and personalized instructor-student discussion was limited to student-initiated interaction. Upon conducting the study, the treatment instructor had not taught the course using a process writing model curriculum and familiarity with doing so was limited to knowledge of studies discussing process writing in the literature.

The process writing model curriculum was used on two of the writing assignments for the course. The two assignments used were a descriptive writing essay and a personal profile/philosophy statement. Both assignments were expository in nature and possessed the same guidelines: two to three pages in length, Times New Roman font, double spaced, and a cover page containing the student's name, assignment title, date, and code number. The code numbers were randomly assigned to the students for confidentiality purposes and only the researcher knew the identity of the individuals and their assigned code numbers. Additionally, all assignments, including the two used as post-tests, were graded using a researcher-designed writing assessment rubric (Appendix I). Using a common rubric to grade all assignments in both the control and treatment groups helped to eliminate instructor bias in grading.

The students were not made aware of the difference between the control and treatment groups of the section and were asked to sign an informed consent form on the first day of class (Appendix C). Students were told their involvement in the study was

strictly voluntary. All 19 students consented to participate. Both the control and treatment instructor ensured the exact same material was being taught in both groups, with the only difference being the employment of the process writing model curriculum with the treatment group. Upon completion of the course, students were given a debriefing document (Appendix D) explaining in greater detail what the study entailed and how their participation would be used. The debriefing document was given to students after they completed the course final on June 30, 2005.

Two classrooms were used to facilitate the control and treatment groups. The classrooms were located on the first floor of the Animal Science building and were mirror images of one another. Both classrooms offered stadium seating, multi-media capabilities and were capable of seating a maximum of 220 and 108 students, respectively, according to the Registrar's Office.

While the findings from the pilot study were not discussed or used with regard to this study, it served to further validate the internal reliability of the study. Teijlingen and Hundley (2001) contend pilot studies are indeed an integral part of a strong study; while not foolproof, they do increase the likelihood for success in the main study and provide valuable insight for the researchers. Additionally, the use of a pilot study allowed the panel of experts to develop comfort and consensus with regard to the scoring rubric used for the post-test writing artifacts.

<center>Population and Sample</center>

The population consisted of students (N=58) enrolled in one section of the writing-intensive service course AGCM 3103 (Communicating Agriculture to the Public) for the fall 2005 semester at Oklahoma State University. The students had majors in the

<center>47</center>

College of Agricultural Sciences and Natural Resources at Oklahoma State University and were not recruited for the study. The population was selected for participation in the study based on its enrollment in the course, and all participants signed an informed consent form authorizing the researcher to use the data obtained during the semester anonymously as part of the study. Because the treatment instructor employed peer conferencing in groups of two as a part of the process writing model curriculum, the number of students in the treatment section of the course was kept at an even number.

Treatment

The control group consisted of teaching the course in the traditional manner it had been taught for three years at the institution (Appendix E). Students were given two assignments of equal values, explained the guidelines and procedures for completing them, and then required to turn in a finished product. The two assignments used were a descriptive writing essay and a personal profile/philosophy statement. Both assignments were expository in nature and possessed the same guidelines. This methodology did not allow for formal feedback or interaction between the professor and student, unless student-initiated.

All assignments, including the two used as post-tests, were graded using a researcher-designed writing assessment rubric (Appendix I). Using a common rubric to grade all assignments in both the control and treatment groups helped to eliminate instructor bias in grading.

The treatment consisted of teaching two assignments of equal values using the process writing model curriculum (Appendix B) as discussed in the literature. The treatment was adapted from a secondary study completed in an English classroom

(Carney, 1996). The process writing technique (Unger & Fleischman, 2004) consisted of five distinct steps students undertook in completing the assignment: prewriting, drafting, revising, editing and publishing. As used in this study at the post-secondary level, a combination of six days of class time were devoted to teaching and guiding students through the process of completing the two assignments. The two assignments used with this treatment were a descriptive writing essay and a personal profile/philosophy statement. Both assignments were expository in nature and possessed the same guidelines.

The process writing treatment took place during a series of six days and is outlined in Table 2. The first day consisted of introducing students to the assignment and helping them to brainstorm briefly on a topic through some sort of prompt or activity. Only a short amount of time, about 10 minutes, was devoted to the assignment on the first day. On the second day devoted to the assignment, students were given an assignment sheet that contained five questions designed to help students further brainstorm, outline and focus their paper. Before leaving class on the second day, the students were required to have the instructor approve a thesis or focus statement for their assignment. The students were next asked to write a first draft (D1) of their paper. They were advised that the first draft could be handwritten or typed and no one would be reading their first draft; it was simply for self-analysis.

The students spent approximately 20 minutes in class working on a focus for their paper the second day. Upon bringing the first draft (D1) to class on the third day, the students were given time in class to read and edit their papers individually. The instructor did not read or score the first drafts, but she did check to ensure all students had

Table 2

Process Writing Curriculum

1. Pre-Writing

Brainstorming on topic
Pre-Writing Question Sheet
   o Five prompts to assist students in thinking about topic and making an
        outline for their paper.

2. Drafting

1st Draft (D1)
    Students bring rough draft of paper to class for self-analysis. Draft
    can have errors, but should be legible.
    Students must make a list of goals they wish to change for 2nd draft.

3. Revision
Students must revise 1st draft and be prepared to read their 2nd draft aloud to a partner for peer critique.
Drafting

2nd Draft (D2)
    Peer Conferencing
    Students choose a peer and review one another's 2nd draft. Students
    read aloud their essays and make suggestions for improvement using
    the Praise, Question, Polish technique (Neubert & McNelis, 1986).

Revision
Students must revise essays based upon peer feedback of 2nd draft 3rd draft is due to instructor for constructive critique and edits.
4. Editing

3rd Draft (D3)
    Instructor will underline or circle errors, not correct them.
    Instructor will place a check in the margin by a line that contains an
    error so the student can identify it.
    Students should use instructor comments to produce final draft.

5. Publishing
Final draft is to be turned in to instructor for a grade. Class discussion takes place about papers and how students felt about process upon completion.

completed a first draft. While no points were given for completing the first draft, the

instructor did deduct points from the final grade if each of the drafts were not completed

and the process writing model curriculum not followed as explained. The instructor then

discussed the papers as a whole with the class. The instructor asked pointed questions

designed to challenge students in determining why they had chosen a particular topic.

The class also discussed the importance of focus, tone, organization, and development.

Before leaving class on the third day, the students were required to write a list of goals they would like to change for their second draft. When the students returned to class with the second draft (D2) of the paper on the fourth day, they were asked to pair up with a partner for a peer conference.

The instructor introduced the Praise, Question, Polish technique (Neubert & McNelis, 1986) and provided the students with guidelines for peer conferencing. The students were asked to sit next to one another, and the writer was to read his or her paper aloud while the partner followed along and read the paper silently. After the writer completed the reading of his or her essay, the partner was to engage in praising the portions of the paper he or she found to be well written and should not be changed, questioning portions of the essay that seemed unclear, and finally suggesting improvements for polishing portions of the paper. Upon completion, the partners were to switch roles and complete the peer conference technique again. The students were instructed to use the suggestions from the peer conferencing to complete a third draft (D3) of the essay. The third draft was turned in to the instructor for editing. The instructor edited the paper by placing checkmarks in the margin of the paper where mistakes (misspellings, typos, punctuation/grammatical errors, etc.) occurred. The instructor did not correct the errors but rather identified areas for correction. The instructor returned the third draft to the students and the date for the final draft for a grade was given. Adequate time was given between phases and drafts of the paper, with the entire process for one of the two treatment assignments taking between three and four weeks.

Data Collection

The administration of treatment and data collection took place during the fall 2005 semester at Oklahoma State University. The study used triangulation of data-gathering techniques to gather information effectively from the students. The pre-measure and post-tests administered to the students were quantitative in nature to assess level of equivalency and improvement in their writing abilities, respectively, as a result of completing the course. The anonymous feedback forms (Appendix J) and interview schedule (Appendix K) were qualitative in nature and provided rich details and information for the study that could not be garnered using quantitative measures alone.

Students in both the control and treatment groups were given a pre-measure and two post-test writing assignments. Each of these writing assignments provided data to test the study's hypothesis. All students in the control and treatment groups were given two anonymous feedback forms to complete, and a random sampling of students in the control and treatment groups were asked to participate in two interviews with the researcher regarding writing, their attitude, and the course. The interviews were conducted during the first and last weeks of classes during the fall semester. The feedback forms were distributed at the mid-term of the semester and again during the last week of classes.

The pre-measure was used to determine level of equivalency between the control and treatment groups. The pre-measure was administered at identical times in the control and treatment classrooms. The pre-measure provided students with a writing prompt and students were asked to write for thirty minutes. The writing prompt for the pre-measure asked students to write about a timely agricultural issue relevant to their field of study

(major) within agriculture. The students were instructed to plan and write an essay in which they developed their points of view and supported their position with reasoning and examples taken from readings, studies, experiences, or observations.

The post-tests measured differences between students in the control and treatment groups. The two post-tests were expository in nature; one was a descriptive essay in which the students were asked to describe in detail an object or place. The second post-test was a personal philosophy/profile statement in which the students could describe a particular philosophy they held (such as teaching, leadership, etc.) or provide a personal profile about themselves.

In an effort to control for fidelity of treatment, both the control and treatment groups were asked to complete two identical anonymous feedback forms (Appendix J) during the semester. The students were given the forms at the mid-point in the semester and again during the last week of classes. Students were asked to complete the forms anonymously. The anonymous feedback forms were used to help ensure fidelity of treatment between the control and treatment groups of the study because all students were asked to respond, rather than only those in the treatment group. Because the researcher was the instructor administering the process writing treatment of the study, no additional checks were used.

The students were randomly chosen for the interviews and met with the researcher individually in a conference room in the Agricultural Hall building on the Oklahoma State University campus. The researcher prepared an interview schedule (Appendix K) to base questions for the students, but she allowed for interviewee responses to guide the interview process. The interview schedule consisted of 12 prepared interview questions

using a variety of open-ended, closed-ended, scenario-option and likert scale questions. The interviews ranged in length from 10 to 20 minutes. The interviews were recorded, transcribed, and coded by the researcher.

Instrumentation

The instrumentation for this study consisted of quantitative and qualitative instruments. The quantitative instrument was the New SAT® Essay scoring guide developed by the New SAT® Essay, and the qualitative instrument consisted of coding and theming of student data collected.

Students in both the control and treatment groups of the course took a pre-measure and two post-tests to assess their writing abilities. The pre-measure and post-tests were scored using the New SAT® Essay scoring guide (Appendix H). The scoring guide divides writing scores into six categories (The New SAT®: A Guide for Admission Officers, 2005). The low score of one was given to an essay fundamentally lacking, demonstrating little mastery and flawed by one or more errors. A score of two was indicative of an essay seriously limited, demonstrating little mastery, and flawed by one or more errors. A score of three indicated an essay that was inadequate, but demonstrating developing mastery, but also marked by one or more weaknesses. A score of four was given to an essay that was competent, demonstrating adequate mastery, but with some lapses in quality. A score of five indicated an essay that was effective, demonstrating reasonable consistent mastery, and possessing only occasional errors or lapses in quality. The top score of six was assigned to an essay that was outstanding, demonstrating clear and consistent mastery, and possessing only minor errors.

The pre-measure was administered during the first week of classes and the two post-tests were administered during the course of the fall semester. The pre-measure was used to determine level of equivalency between the control and treatment groups, while the post-tests were used to compare the control and treatment groups.

All students in both the control and treatment sections completed two anonymous feedback forms regarding writing, their attitude toward writing, and the class in general. In addition, a random sample of 30 (N=30) students, 15 from the control and 15 from the treatment group voluntarily and confidentially were asked to complete a pre- and post-interview session with the researcher. Eighteen students participated in both the pre-interview and post-interview, with eight (n = 8) students being from the control group and 10 (n = 10) students from the treatment group. The interviews were used to gather demographic information about the students, assess their perception of writing prior to and after completing the course, as well as address their preferred teaching method and instructor style in a writing course. In addition, the interviews also addressed students' perceptions regarding the necessity for writing proficiently upon graduation. A comparison was done between the pre- and post-interviews with the students, and the anonymous feedback forms were used to validate the information gathered from the interviews.

Data Analysis

The panel of experts scored the pre-measure and post-test writing artifacts holistically. Camara (2003) stated, "This approach is based on the assumption that an essay or writing sample can be graded best by evaluating the whole essay, not by scoring the essay on several different factors like grammar, spelling, organization, and structure

and then summing these parts to produce a total score" (p. 1). The panel was trained similarly to that suggested by The New SAT® Guide for Admission Officers (2005). The New SAT® Guide for Admission Officers' Official Educator Guidebook advocates using a chief reader to train readers to score the essays; two readers read the same essays independently and score them, and if a discrepancy arises an experienced reader scores the essay and a consensus score is assigned. Prior to beginning actual scoring of essays, The New SAT® Guide for Admission Officers' Official Educator Guidebook provides six sample essays to be scored by the readers to ensure consistency and agreement on criteria for each score delineated on the rubric. In this study, three readers or a panel of experts was used to score the essays and consensus was established among the panel before a final score was given. The panel read the essays independently and then met as a group to come to consensus. The researcher met with the panel to ensure scoring was completed in an academic and fair fashion. The panel scored three sample essays and developed consensus for the criteria used in each of the scores on the rubric. Prior to scoring the data used in the study, the panel honed their scoring skills by scoring 19 artifacts from the pilot study.

The researcher participated in the scoring sessions of the artifacts, taking notes and ensuring fair and accurate scoring took place. The researcher made note of comments the scorers made with regard to why an essay was scored in a particular fashion or general comments that may have been influential in the scorers' decisions. While the writing artifacts were provided to the panel in a set order, the panel members chose to read the artifacts in an order of their own choosing. As such, one panel member read the artifacts in a different order than the other two members; thus, potentially contributing to

some differences in scores on the artifacts. The panel discussed the importance of the order in which they read the artifacts and accounted for the fact discrepancy and difficulty coming to consensus on some writing artifacts may have resulted in the different order in which the members read the artifacts.

The anonymous feedback form (Appendix J) was developed by the researcher and given to establish fidelity in the information reported in the random sampling of student interviews. The students interviewed numbered 18 (n = 18), and the interviews were conducted solely by the researcher. The students chosen to interview were based on Bryman's theoretical saturation in sampling technique (2004). Students were asked to voluntarily meet with the researcher for the interview. Because the interviews were voluntary, a number of students chose not to participate, or simply signed up and forgot to attend. The researcher attempted to reach all interviewees via e-mail to reschedule missed interviews, but not all interviewees chose to reschedule. All interviews took place in the same room under a similar setting during a three-day period at the beginning and end of the semester when the selected interviewees signed up for an interview time slot.

The interviews were held in a small fourth floor conference room of the Agricultural Hall building on the Oklahoma State University campus. The room consisted of a small conference table with seating for four, a large window overlooking the campus, a white board and small credenza. Outside interference was kept to a minimum with no telephones or computers in the room. Additionally, the interviews took place behind closed doors with only the researcher and interviewee in the room. The interviews did take place at varying times throughout the day; therefore, outside factors such as fatigue, hunger and other issues could not be removed.

The pre-measure and post-tests were scored by a panel of experts (Appendix G). The anonymous feedback forms (Appendix J) and student interviews (Appendix K) were analyzed by the researcher. The quantitative data were entered into an Excel spreadsheet and analyzed through *Statistical Package for Social Science version 13.01*. Descriptive data were analyzed and presented in the form of counts, percentages, and means. The study was a true experimental post-test only design comparing a control and treatment group; therefore, an independent samples *t-test* was run for comparison and to analyze the means of the control and treatment groups. Additionally, the qualitative data were coded and themed, with appropriate quotes by students earmarked for triangulation in the study findings. This data is outlined in the following chapter.

Chapter Summary

The methods and procedures used for collection of data to answer the research objectives of the study were addressed in this chapter. The chapter focused specifically on the research design, population description, instrumentation, and sampling measures. The chapter also described the measures used to ensure validity and reliability within the study. The data collection and analysis procedures for the study were outlined as well.

This research incorporated a triangular approach, using both quantitative and qualitative measures. The pre-measure and posts-tests were analyzed quantitatively using a writing assessment rubric; whereas, student interviews and anonymous feedback forms were used qualitatively to provide rich detail.

The research used an experimental, post-test only design. The population consisted of students enrolled in one section of the Communicating Agriculture to the Public course offered during the fall 2005 semester at Oklahoma State University. The

study employed the use of a panel of experts to score the writing artifacts, as well as a

faculty member to assist in the teaching of the control group of the course. The researcher

conducted the research, as well as taught the treatment group of the course.

CHAPTER IV

FINDINGS

Chapter I addressed the documented necessity of writing as a tangible skill in the workplace. The first chapter also described the inherent need for improved writing for today's college graduates. The primary purpose of this study was to determine if a process writing curriculum used in an agricultural-context course would improve students' writing ability.

Chapter II provided a theoretical framework for writing and discussed several impactful writing movements that have shaped secondary and post-secondary education. Specifically, Chapter II addressed the history and importance of writing, three of the most recent writing movements in the last 30 years, teaching writing with a process writing curriculum, the need for writing, and the future of writing.

Chapter III described the methods and procedures used to address the research questions that guided the study. Chapter III specifically addressed the IRB approval for the study, the population, the research design, instrumentation, validity, reliability, data collection, and data analyses used in the study.

This chapter presents the quantitative and qualitative findings obtained from this study. The findings are presented according to the research questions stated in Chapter I. The first and second research questions were answered on the basis of quantitative data

from participant assignments in the study. The results addressed the effect of a process writing curriculum on post-secondary student writing performance in an agricultural-context course. The third, fourth, and fifth research questions were answered on the basis of qualitative data provided by a random sample of student interviews and anonymous feedback forms. The results address student's perceptions toward writing and its usefulness in their professional lives upon graduation from college. The findings of the quantitative data were triangulated by the responses of the participants in personal interviews and documentation contained in feedback forms from the qualitative data. To protect the identity of the students who participated in the study, each participant was assigned a number. Also, so as not to disclose the gender of the student while referring to the respondents, the generic pronoun "he" was used.

Findings Related to Selected Characteristics of Students Enrolled

in the AGCM 3103 Course at Oklahoma State University

Student participants were asked to respond to questions that described selected personal characteristics. This information has been summarized and reported to provide a profile of the students participating in this study.

Age: Fifty-eight students participated in the study (control, n = 30, and treatment, n = 28), and their mean reported age was 21.76 years old. In the control group, the 30 students had a mean reported age of 22 years old, with a range of 20 to 26 years of age. In the treatment group, the 28 students had a mean reported age of 21.5 years old, with a range of 19 to 26 years of age.

Gender: Regarding the gender of the student participants (n = 58), 36 (62.1%) were male and 22 (37.9%) were female (Figure 3). The control group (n = 30) consisted of 19 (63.3%) male students and 11 (36.7%) female students. The treatment group (n = 28) consisted of 17 (60.7%) male students and 11 (39.3%) female students (Table 3).

Figure 3
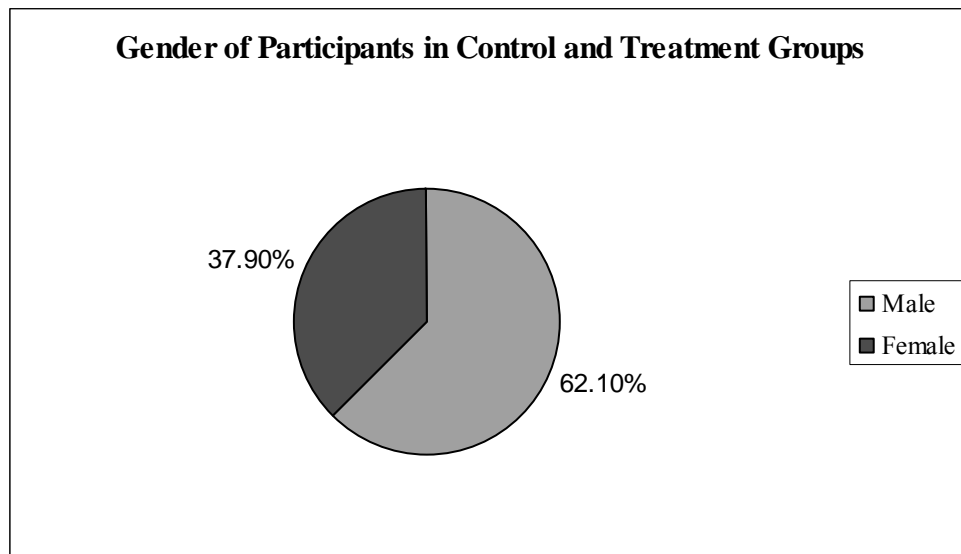
Table 3

Gender of Student Participants by Group (N=58)

Gender	Control Group n	Control Group Percent	Treatment Group n	Treatment Group Percent
Male	19	63.3	17	60.7
Female	11	36.7	11	39.3

Grade in Composition I Course: Students enrolled in the Communicating Agriculture to the Public course were fulfilling their third credit requirement for English at Oklahoma State University. Prerequisites for the course required students to complete

Composition I and Composition II, or take a university-administered test that placed them out of the courses. Student grades in the Composition I course were on a grade scale of 1 to 4, with 1 = D, 2 = C, 3 = B, and 4 = A in the course.

Fifty-eight students participated in the study, and 48 (82.8%) completed the Composition I course. The overall mean reported grade in the Composition I course was 2.96. Of the 30 students in the control group, 26 (86.7%) students completed the Composition I course with a mean grade in the course of 2.96. Of the 26 students who have a reported grade in the class, two (6.7%) earned a D, four (13.3%) earned a C, 13 (43.3%) earned a B, and seven (23.3%) earned an A in the class. Of the 28 students in the treatment group, 22 (78.6%) completed the Composition I course, with a mean grade in the course of 2.95. Of those 22 students, six (21.4%) earned a C, 11 (39.3%) earned a B, and five (17.9%) earned an A in the class (Table 4).

Table 4

Composition I Course Grade of Student Participants by Group (N=48)

Grade	Control Group n	Control Group Percent	Treatment Group n	Treatment Group Percent
1 (D)	2	6.7	0	0.00
2 (C)	4	13.3	6	21.4
3 (B)	13	43.3	11	39.3
4 (A)	7	23.3	5	17.9

Grade in Composition II Course: Students enrolled in the Communicating Agriculture to the Public course were fulfilling their third credit requirement for English at Oklahoma State University. As such, prerequisites for the course required students to

complete Composition I and Composition II, or take a university-administered test that placed them out of the courses.

Student grades in the Composition II course were on a grade scale of 1 to 4, with 1 = D, 2 = C, 3 = B, and 4 = A in the course. Fifty-eight students participated in the study, and 38 (65.5%) completed the Composition II course. The mean overall grade reported in the Composition II course was 3.18. Of the control group students (n = 30), 21 (70%) completed the Composition II course with a mean grade of 3.33. Of the 21 students, two (6.7%) earned a C, 10 (33.3%) earned a B, and nine (30.0%) earned an A. In the treatment group (n = 28), a total of 17 (60.7%) students completed the Composition II course with a mean grade of 3.00. Of those 17 students, five (17.9%) earned a C, seven (25.0%) earned a B, and five (17.9%) earned an A in the Composition II course (Table 5).

Table 5

Composition II Course Grade of Student Participants by Group (N=38)

Grade	Control Group n	Control Group Percent	Treatment Group n	Treatment Group Percent
1 (D)	0	0.00	0	0.00
2 (C)	2	6.7	5	17.0
3 (B)	10	33.3	7	25.0
4 (A)	9	30.0	5	17.9

ACT English Score: Students enrolled at Oklahoma State University are required, unless waived by university administration, to take the national standardized ACT test. The English score on the ACT test had a possible range from 1 to 36, with a score of 1 being low and a score of 36 being high. Fifty-six (96.6%) students reported an ACT

English score, with a mean of 22.52 and a range from 10 to 35. The students' scores naturally broke into three achievement groups of low, middle, and high. Approximately 21% of students scored in the low-achieving group, 54% scored in the middle-achieving group, and 25% scored in the high-achieving group.

In the control group (n = 30), 28 students reported an ACT English score, with a mean score of 22.04 and a range from 10 to 31. In the treatment group (n = 28), 28 students reported an ACT English score, with a mean score of 23.00, and a range from 13 to 35.

ACT Reading Score: The reading score on the ACT test had a possible range of 1 to 36, with a score of 1 being low and a score of 36 being high. Fifty-six (96.6%) students reported an ACT Reading score, with a mean of 24.70 and a range from 12 to 36. In the control group (n = 30), 28 students reported an ACT Reading score, with a mean of 24.43 and a range from 12 to 35. Regarding the treatment group (n = 28), 28 students reported an ACT Reading score, with a mean of 24.96 and a range from 15 to 36. The range of scores in both groups was spread evenly on ACT Reading scores in the control and treatment groups.

Student Overall Grade Point Average: Regarding the students' overall grade point average, all student records indicated a grade point average on a 4.0 scale. The students' mean grade point average was 3.0172, with a range from 1.93 to 4.0. In the control group (n = 30), the mean grade point average was 2.93 with a range from 1.98 to 3.97. Concerning the treatment group (n = 28), the reported grade point average was 3.10, with a range from 1.93 to 4.0.

Findings Related to the Effects of a Process Writing Curriculum

on Student Performance

Quantitative Analysis

The scoring guide for the New SAT® Essay was used to measure differences between groups at the end of the study's treatment. Specifically, because it is a nationally administered and reliable test of writing skills, the scoring guide for the essay portion of the New SAT® Essay (2004-05, The College Board) was employed as a measure of students' general writing aptitude. The SAT® (The College Board) is a widely used test in the United States for college admission, and the New SAT® Essay is seen as a valuable predictor of student writing success, specifically as a predictor of freshman grade point average and grades in English composition. This assessment provided data to test the study's hypothesis. Means were calculated by group for the purpose of comparative statistical analysis. Independent samples *t-tests* were used to compare the different sets of treatment and control group means to address the study's research hypotheses.

Research question one sought to determine the effect of a process writing curriculum on student writing performance in an agricultural-context course. Students' final grade in the course, as well as a pre-measure and two post-tests, were used to answer this question. Student grades' were coded on a scale of 1-4, with 1 = D, 2 = C, 3 = B, and 4 = A. The pre-measure and post-tests were coded on a numeric scale of 1 to 6, with 1 being the low score and 6 being the high score. The post-tests were coded as a descriptive essay and profile/philosophy essay, respectively. The control and treatment groups were compared in all four variables.

Pre-Measure Analysis

A pre-measure was given to the two groups of student participants, and it was scored using the scoring guide for the New SAT$^{®}$ Essay to determine equivalence of groups concerning writing aptitude.

Pre-Measure: An independent samples *t-test* on the pre-measure in the course was used to compare the control group and treatment group and to determine if the two groups were equal before the treatment was applied. The *t-test* revealed there was no significant difference between students in the control or treatment groups before the process writing treatment at an *a priori* determined alpha level of .05 (Table 6). The 30 students in the control group had a mean score on the pre-measure of 3.10, while the 28 students in the treatment group had a mean score on the pre-measure of 3.15; both scores corresponding to a mid-range score on the writing assessment rubric from 1 to 6. A *t-test* value of -.241 was computed and found not to be significant at the .05 level, indicating the control and treatment groups were equal.

Post-test Analysis

$H_0 1$ There is no difference in writing skills between the two study groups as measured by students' grades in the course.

To address the first null hypotheses, the students' grades in the course were compared between the control and treatment groups.

Students' Grades: An independent samples *t-test* on students' grades in the course was used to compare the control group and treatment group. The *t-test* revealed students in the treatment group who received the process writing treatment earned a significantly higher grade in the course (Table 7). The group of 28 students in the treatment group had

Table 6

Control vs. Treatment t-test for Pre-Measure

Group	*n*	Mean	SD	t	p
Control	30	3.10	.712	--	--
Treatment	28	3.15	.705	-.241	.810

df = 56; α = 0.05; Note: Scale for pre-measure: 1=low; 6=high

a mean grade in the course of 3.43, while the group of 30 students in the control group

had a mean grade in the course of 2.93. A *t-test* value of -2.544 was computed and the

difference was found to be significant at an *a priori* determined alpha level of .05. Based

on this analysis, the null hypothesis was rejected. Equality of variances was assured with

a Levene's Test (F_{max} = .678). Effect size was calculated using Keppel's (1991) formula

for omega squared. The value (^{2} = .08) of the effect size was considered a "medium"

effect (Cohen, 1977).

$H_0$2   There is no difference in writing skills on a descriptive writing assignment

as measured by the New SAT® Essay scoring guide.

To address the second null hypothesis, an analysis was conducted on students'

descriptive writing assignment performance by group (control and treatment) after the

treatment was administered. The descriptive writing assignment was scored using the

New SAT® Essay scoring guide.

Post-test Descriptive Essay: An independent samples *t-test* on the post-test

descriptive essay in the course was used to compare the control group and treatment

group mean scores. The *t-test* revealed students in the treatment group who received the

Table 7

Control vs. Treatment t-test for Course Grade

Group	n	Mean	SD	t	p	ω^2
Control	30	2.93	.785	--	--	--
Treatment	28	3.43	.690	-2.544	.014	.08

df = 56; α = 0.05; Note: Scale for course grade: 1=D, 2=C, 3=B, 4=A

treatment was administered. The descriptive writing assignment was scored using the

New SAT® Essay scoring guide.

Post-test Descriptive Essay: An independent samples *t-test* on the post-test

descriptive essay in the course was used to compare the control group and treatment

group mean scores. The *t-test* revealed students in the treatment group who received the

process writing treatment earned a significantly higher score on the writing assessment

rubric (Table 8). The group of 28 students in the treatment group had a mean score of

3.68, while the group of 30 students in the control group had a mean score of 3.14. A *t-

test* value of -2.368 was computed and the difference was found to be significant at an *a

priori* determined alpha level of .05. Based on this analysis the null hypothesis was

rejected. Equality of variances was tested with a Levene's Test (F_{max} = .483). Effect size

was calculated using Keppel's (1991) formula for omega squared. The value (ω^2 = .14) of

the effect size was considered a "large" effect (Cohen, 1977).

H_03 There is no difference in writing skills on a profile/philosophy writing

assignment as measured by the New SAT® Essay scoring guide.

Table 8

Control vs. Treatment t-test for Post-test Descriptive Essay

Group	n	Mean	SD	t	p	ω^2
Control	30	3.14	.973	--	--	--
Treatment	28	3.68	.723	-2.368	.021	.14

df = 56; α = 0.05; Note: Scale for pre-measure: 1=low; 6=high

To address the third null hypothesis, an analysis was conducted on students' profile/philosophy writing assignment performance by group (control and treatment) after the treatment was administered. The descriptive writing assignment was scored using the New SAT[®] Essay scoring guide.

Post-test Profile/Philosophy Essay: An independent samples *t-test* on the post-test profile/philosophy essay in the course was used to compare the control group and treatment group. The *t-test* revealed students in the treatment group who received the process writing treatment earned a significantly higher score on the writing assessment rubric (Table 9). The group of 28 students in the treatment group had a mean score of 3.41, while the group of 30 students in the control group had a mean score of 3.08. A *t-test* value of -2.461 was computed and the difference was found to be significant at an *a priori* determined alpha level of .05. Based on this analysis the null hypothesis was rejected. Equality of variances was assured with a Levene's Test (F_{max} = .058). Effect size was calculated using Keppel's (1991) formula for omega squared. The value (ω^2 = .07) of the effect size was considered a "medium" effect (Cohen, 1977).

Table 9

Control vs. Treatment t-test for Post-test Profile/Philosophy Essay

Group	n	Mean	SD	t	p	[2]
Control	30	3.08	.520	--	--	--
Treatment	28	3.41	.491	-2.461	.017	.08

df = 56; α = 0.05; Note: Scale for pre-measure: 1=low; 6=high

Findings Related to Students' Perception of Writing Based on Participation

in a Process Writing Curriculum

Qualitative Analysis

The researcher used personal interviews with a random sample of students from the control and treatment groups, as well as an anonymous feedback form, to address fidelity of treatment, i.e., "Did the instructor implement the process writing treatment?"

Research question three sought to describe students' perception of writing based on the differences between a process writing curriculum and a traditionally taught curriculum in an agricultural-context writing course. A random sample of students from both the control group and treatment group were interviewed before and after the process writing treatment was employed to answer this question. Results from the control group and treatment group were compared. A total of 18 (n=18) students from the control and treatment groups participated in both the pre and post treatment interviews, with eight students from the control group and 10 students from the treatment group.

All the interviewees were asked their attitude toward writing and their feelings about the course during the first week of classes and the last week of classes.

Major Findings: The two major findings of the interview analyses were:

1.   Student attitude toward writing was mixed, often being dependent upon a number
       of variables, and

2.   Students had moderate to positive feelings about the course and felt it was helpful
       in improving their writing skills.

Data Analyses: Two main themes emerged in the context of student attitude toward

writing and feelings about the course. The themes were: variables affecting attitudes and

benefits of the course.

Variables affecting attitudes prior to treatment: Before the treatment was

administered, the students assigned to the control group expressed mixed opinions about

their attitude toward writing, stating it depended on the topic assigned and the length of

the writing assignment. Students in the control group were equally divided between

having a like and dislike for writing: four students expressed a like for writing and

positive attitude, and four expressed a negative attitude and dislike for writing. One

student stated "It depends on what I'm writing about as to whether or not I like it."

Another student commented that he enjoyed writing in moderation, as long as it did not

become time consuming. Students in the treatment group expressed liking to write, with

seven of ten students expressing liking to write. Students comments were repeated such

as "I like writing" and "I like being creative." However, with both control and treatment

groups, several students did not enjoy writing. Comments such as "I'm not really fond of

it" and "I don't really enjoy it that much" were common among students who did not

possess a positive attitude. One student in particular stated his attitude was hostile and he

had problems figuring out what to write. This same student also commented that he did not have very good English teachers in high school and thought this affected his attitude.

Variables affecting attitudes after treatment: Upon completion of the class, students' attitudes did not differ significantly from prior to administration of treatment. In the control group, one student commented that his attitude had shifted from not having a good attitude to "My attitude is pretty good toward descriptive writing." In the treatment group, students' attitudes remained positive. One student, who originally commented that writing scared him, commented that his attitude was "a little better now."

Benefits of the course prior to treatment: Seven of eight students in the control group had moderate to positive feelings toward the course prior to treatment and felt it would help to improve their writing skills. Students expressed that the course, Communicating Agriculture to the Public, was better than taking Technical Writing because it was in an agricultural context. One student commented that the course was especially beneficial in preparing him for his chosen profession as an agricultural education teacher. Additionally, other students felt it would be a good refresher course. Students also mentioned that while they didn't particularly care for writing, they did realize it was a necessary skill. Comments such as "I need to know how to communicate with people" were mentioned several times. Students in the control group, who did not possess positive feelings toward the course prior to treatment, expressed either indifference or were unsure of its benefit. In the treatment group, eight of ten students had similar comments to those in the control group and were generally positive about the course. One student stated "Hopefully it will get me to a better level of writing." Other

student commented the course would be a great review and would be helpful because it was in an agricultural context.

Benefits of the course after treatment: Six of eight students in the control group expressed that the course was helpful and they really learned a lot. One student commented the course was rigorous and he was pushed really hard to learn the material. Several students expressed regret over having to take the course simply to fulfill credit requirements as well. Additionally, one student stated the course was a virtual repeat of the Technical Writing course offered on campus. In the treatment group, nine of ten students felt they learned a lot from the course and it was beneficial to them. A student expressed he was better at writing after the class and "I feel more comfortable doing it;" while another student commented that while at first he did not like the course, "just getting critiqued on everything helped give me a solid base of how to write everything and how to do it correctly."

Tables 10 and 11 illustrate the comparison between the control and treatment groups regarding student attitude and feelings toward the course.

In addition to the one-on-one interviews with students, anonymous feedback forms presented to all members of both the control and treatment groups helped to describe students' attitudes and feelings toward the course, both before and following the process writing treatment. Students were asked how they felt about writing, whether they viewed their writing ability as a personal strength or weakness, and what they liked or disliked about the activity of writing.

Table 10

*Group Pre-Treatment Comparison Regarding Student Attitude
and Feelings About the Course*

Control Group Attitude	Treatment Group Attitude
I really like to write, I think it's fun.	I don't mind it; it's pretty easy to write.
I enjoy it in moderation.	I like writing, just not the grading part.
It depends on what I'm writing about as to whether or not I like it.	I like it if I'm interested in the topic.
I'm not really fond of it.	It scares me.
I don't like it.	Something I need to work on.

Table 11

*Group Post-Treatment Comparison Regarding Student Attitude
And Feelings About the Course*

Control Group Attitude	Treatment Group Attitude
I like it sometimes, it just depends on the mood I'm in.	I enjoy it as long as it is something I can be creative with.
I enjoy it until it gets time consuming.	I like it; I don't mind doing it.
I do it because it's an effective way to communicate, but I don't like it.	I would say it's positive. I learned a lot more in class than I thought I would.
I just don't like writing.	I like more quantitative things.

Major Findings: The three major findings of the feedback form analyses were:

1.   Students perceived writing, especially opinion writing, as a valuable form of self-

expression,

2.   Students had mixed opinions of their writing ability, and

3.   Student attitude toward writing varied based on student perception of its purpose

and need.

Data Analyses: Five main themes emerged from the feedback forms regarding student

attitude toward writing and feelings about the course. The themes were: empowerment,

negativity, purpose-driven, confidence, and weakness.

Empowerment: Students (n = 10) expressed a variety of comments that reflected their enjoyment of self-expression and opinion in their writing. One student stated, "It's fun I guess; it makes me feel knowledgeable." Common remarks included, "I like relaying my perspective to others so they can understand my point of view" and "I find it easier to express myself with writing than I do speaking sometimes." Additionally, students (n = 4) expressed enjoyment in voicing their opinion, and one student found writing to be a stress reliever. Several students (n = 9) found their attitudes improved upon taking the class and made comments such as "it's better than when I started this class," "it's tough, but it's getting better," and "I feel pretty good about it, especially since taking this class."

Negativity: A common theme among students who did not enjoy writing was negativity. Many students (n = 9) voiced strong resentment about having to write. One student commented "I definitely have bad feelings toward it," while others remarked that writing can be very frustrating. One student remarked he was not comfortable with writing, while another stated "there are many things I would rather do." Typical comments in this theme also included "I hate it" and "I only do it because I'm forced to."

Purpose-Driven: Many students (n = 10) expressed a moderate to positive opinion of writing as long as the writing led to a goal or purpose. Comments such as "writing is okay, as long as it has a purpose" and "writing is good as long as it is purpose-driven" were common. Many students felt writing needs to have a point, and just writing for fun was simply not something they would choose to do voluntarily.

Confidence: Both students with a positive and negative attitude toward writing expressed comments reflecting confidence in their personal writing ability (n = 12). One

student stated "I think I am a good writer. Through previous grades and comments, I feel writing is a strength." Other students commented they felt good about their writing and could generally get their point across in written form. Other comments included remarks by students stating they could express themselves well and were effective writers.

Weakness: A large number of students (n = 10), with both positive and negative attitudes toward writing, felt their writing was a personal weakness and could be improved upon. Student comments included "I feel that I am a poor writer" and "I'm not very good at writing." Other students were indifferent toward writing, yet did not consider it a weakness. Many students were content with the level of writing they were at and not looking to better themselves in terms of improving their writing skills. One student commented "I feel that my writing ability is good enough." One student commented "I do just enough to get by."

Table 12 depicts a thematic matrix of students' attitudes and feelings toward the course.

Findings Related to Students' Perception of Writing Based on Teaching Method, Instructor Style and Self-Described Ideal Writing Course

Research question 4 sought to determine if variables such as teaching method and instructor style affected student achievement in the Communicating Agriculture to the Public course. This question was answered through student perceptions voiced during face-to-face interviews with the researcher.

Table 12

Thematic Matrix of Student Attitude and Feelings Toward Course

Theme	Illustrative Quotes
Empowerment	"It's fun I guess, it makes me feel knowledgeable."
	"I like relaying my perspective to others."
Negativity	"I definitely have bad feelings toward it."
	"I hate it. I would not do it, but I have to."
Purpose Driven	"Writing is okay, as long as it has a point."
	"I like writing with a purpose."
Confidence	"I feel I am a strong writer."
	"It is a personal strength."
Weakness	"I feel that I am a poor writer."
	"I am not very good at writing."

All the interviewees were asked if they believed the method in which writing was taught influenced how much a student learned and how an instructor in a writing course could better assist them in improving their writing skills. Additionally, students were asked to describe their ideal writing course at the college level.

Major Findings: The three major findings of the interview analyses were:

1. Students perceived the method in which writing was taught affects how much an individual learns,

2. Instructor style was seen as critical in a writing class, particularly interface between instructor and student, and

3. Various opinions for an ideal writing course at the college level existed among students.

Data Analyses: Four main themes emerged from the student interviews regarding teaching method, instructor style and a description of the ideal writing course at the college level. The four themes were: attitude, methodology, interaction, and career preparation.

Attitude prior to treatment: Students perceived instructor, as well as student, attitude to play a large role in how much was learned in a writing course. In the control group, student comments such as "you have to reach the student on his or her level" and "students learn more when it's something other than just lecturing" were common. One student commented he believed how much was learned was very dependent on the way a teacher teaches the material, while another student remarked the student must take some responsibility for learning. In the treatment group, students felt instructor attitude was very important to student learning and that not everyone learns the same way. Several students made comments such as "I've had professors who aren't very excited about what we were learning, and I didn't learn anything." Additionally, one student commented he had great teachers in high school and it was the responsibility of the instructor to motivate and push students.

Attitude following treatment: After treatment, student comments remained consistent in believing instructor and student attitude were paramount to how much was learned in a writing course. In the control group, one student remarked that his instructor motivated him to the extent that "it was just like you got it and got on the bandwagon and you wrote." Additionally, one student commented his perception of instructor attitude shifted from not mattering to having an impact upon student learning. In the treatment group, students continued to make remarks such as "if you can somehow put it out there so the students are interested in writing and kind of get excited about it, I think that helps out a lot."

Methodology before treatment: Overall, students felt the manner in which a writing course was taught influenced how much a student learned, with seven of eight

students in the control group stating methodology influences how much an individual learns. Students in the control group made comments regarding students learning more when the method was more than just lecturing, as well as having an opportunity to discover what the instructor was looking for in terms of writing. One student commented, "I think method is very critical to how one learns" and "if you're not taught very well you're not going to do well" were common. In the treatment group, all ten students also felt methodology was important to learning. Student comments ranged from varying classroom instruction to providing examples of what an instructor expected work to look like. One student stated, "everybody doesn't learn the same way." One student did remark that while method was important, it was difficult to influence how much a student learned at this level because many students are set in their ways.

Methodology following treatment: Student thoughts on teaching methodology remained very similar to what they perceived before treatment. All of the eight students in the control group agreed that teaching method makes a difference. However, they also expressed practice in writing was just as important to learning. In the treatment group, all ten students after the treatment continued to feel methodology played an important role in the learning process. One student in particular mentioned a specific teaching style for writing: process writing. He stated, "It really helps out a lot to write in a process instead of turning it in as a one time grade."

Interaction preceding treatment: Students perceived interaction with an instructor to be critical to learning. In the control group, all eight students felt some sort of interaction with the instructor was needed. Student comments such as "talking with students on an individual basis" and "having one-on-one meetings with students" were

common. One student remarked that many students were apprehensive to talk in class and would be more comfortable talking on a personal basis with a professor. Additionally, students in the control group also felt feedback in a positive form was important as well. One student said, "I do better with anything with positive feedback first." In the treatment group, all ten students made similar comments and felt face-to-face interaction with an instructor was important for students. Students felt constructive criticism, allowing for multiple drafts of papers and being available to help students was beneficial also. One student commented that emphasis should be placed on "Telling us what we did wrong and how we can correct it." Other students stated they liked instructors to proof-read or critique their work as well.

Interaction following treatment: Following the process writing treatment, all eight students in the control group continued to comment that a writing course taught with frequent interaction between the instructor and student was beneficial. Student comments such as "giving students more opportunities for revision and discussion of why something was wrong would be helpful" were common. In the treatment group, all ten students were more apt to comment they liked the way the course had been taught using a process writing approach and continued to advocate for instructor interaction. One student commented "I like the fact that we edited in class. That kind of gives us a chance to realize what our mistakes are, our habits and everything." Additionally, some students also said more specific guidelines and stepping students through the process of writing a paper was needed.

Career preparation before treatment: When asked about their ideal writing course, many students felt preparing them for their future was a high priority. In the control

group, six of eight students suggested career preparation, and one student suggested his ideal course was "definitely a class that was oriented to the needs of each student." In addition, many students stated not having a term paper or more frequent smaller writing assignments would be helpful. One student stated it should be "a combination of creative and professional writing." However, several students also mentioned their ideal course would be similar to the Communicating Agriculture to the Public or Technical Writing courses. In the treatment group, seven of ten students felt a course that would help prepare them for their future would include frequent smaller writings, as well as stress grammar and other technical skills. One student commented that a course employing a process writing approach would be helpful. He said, "I don't think I learn anything if I just write it and turn it in and get my grade."

Career preparation after treatment: After the course was completed, students stressed the significance of business writing. Comments such as "mainly business writing" were common in the control group. Additionally, seven out of eight students in the control group felt writing of all types were helpful, as well as receiving input from others was important. One student felt "more punctuation, grammar style stuff" was also integral to his prescribed ideal writing course. In the treatment group, writing that would be used outside of college was key for students, but five out of ten comments suggested modeling a class after the Communicating Agriculture to the Public course. Student comments stressed "practicing writing and stuff you can use later in life." One student stated his ideal course would be "where you get to see what you're doing wrong before you get penalized."

Tables 13 and 14 show the comparison between control and treatment groups

regarding teaching method, instructor style and the ideal writing course at the college

level.

Table 13

*Group Pre-Treatment Comparison Regarding Teaching Method, Instructor Style
and Ideal Course*

Control Group	Treatment Group
Students learn differently.	Not everyone learns the same.
Avoid harsh judgment.	Need a teacher that's excited.
Having rough drafts critiqued helps.	More opportunities for revision.
Spending more time individually.	It's go to be interactive for me.
Mix of creative and professional.	The way you're teaching it.

Table 14

*Group Post-Treatment Comparison Regarding Teaching Method, Instructor Style
and Ideal Course*

Control Group	Treatment Group
Teaching method makes a difference.	Needs to be interesting and be excited.
Take time and be patient. .	Process writing helps.
Constructive criticism.	Not only what we did wrong, but how to fix it.
Mainly business writing.	Help us prepare for the future.

Anonymous feedback forms were used also to collect data from all members of

both the control and treatment groups. Students were asked what type of writing they

prefer and what activities or instruction they felt would help to improve their writing

skills.

Major Findings: The three major findings of the feedback form analyses were:

1.   Students felt writing is a process, and revision was especially important.

2. In a writing course, students saw instructor attitude and interaction as key factors to success.

3. Students preferred the formality and usefulness of business writing to other types of writing.

Data Analyses: Three main themes emerged from the feedback forms regarding the types of writing preferred by students and what activities or instruction would help to improve their writing skills. The themes were: process writing, effectiveness of instructor, and career preparation.

Process writing: Students (n = 7) perceived that viewing writing as a process, rather than a product, was necessary for learning to take place. Comments such as "you can't have a perfect paper on the very first try" and "a process because it takes time and many steps" were common among students. One student remarked, "I feel like I am constantly going through a series of steps to produce quality work each time I write an essay." Additionally, students felt a paper can always be improved, and editing and critiquing were an important part of the process.

Effectiveness of instructor: Students (n = 7) generally believed the instructor in a writing course made a difference, both in his or her approach to the course and his or her interface with students. When asked what type of instruction could help improve their writing skills, students made comments such as "I think a good teacher can teach their students anything" and "being able to have feedback on my writing without having it count against my grade." Additionally, students (n = 6) felt having an experienced eye look at papers and increased feedback from the instructor on what and why something was incorrect would be helpful.

Career preparation: In a writing class, students (n = 7) often preferred business writing that was applicable to their lives after graduation as most beneficial. Student comments such as "writing things that are relevant to my life/occupation" and "doing more things related to the business world and research" were common. Students indicated writing more things that have a meaning would be helpful as well. Often students did not like to use the creativity and imagination they felt was needed to write some papers in class; they preferred the formality and structure of business writing like cover letters and memorandums. Comments were made also about the benefit of writing every day as well as having an interest in the topic one was writing about.

Table 15 depicts a thematic matrix of students' preferences in writing and activities or instruction that could improve writing.

Table 15

Thematic Matrix of Writing Preferences and Activities/Instruction to Improve Writing

Theme	Illustrative Quotes
Process Writing	"I go through several steps to write an essay."
	"You can't have a great paper on the first try."
	"Every time I go back I find ways to improve the paper."
Effectiveness	"A good teacher can teach their students anything."
Of Instructor	"Having an experienced eye look over a paper can really help."
	"Feedback from professions – teachers."
Career Preparation	"I prefer business writing and short letters.
	"Business writing because it is more direct and to the point."
	"Writing things relevant to my life/occupation."

Findings Related to Students' Perception of Necessity of Effective Writing

in their Professional Lives

Research question 5 sought to determine if students believed effective writing would be necessary in their professional lives upon graduation from college. This question was answered through personal one-on-one interviews with students.

All the interview participants were asked what skills they felt were necessary to be considered a good writer and how important they believed proficient writing skills were for college graduates. In addition, the interviewees were asked whether they felt the course, Communicating Agriculture to the Public, would be beneficial to them and their future professional success, as well as if they believed the course would help to improve their writing skills.

Major Findings: The four major findings of the interview analyses were:

1. Students had mixed opinions on what skills were necessary to master for good writing,

2. Proficient writing skills for college graduates was viewed as important to very important by students,

3. Students felt the course, Communicating Agriculture to the Public, would be beneficial to their future success as a professional depending on their chosen profession, and

4. As a means for improving writing skills, students were mixed in their opinions.

Data Analyses: Four main themes emerged from the student interviews regarding skills needed for good writing, the importance of writing and the benefit of the course. The four

themes were: learned and inherent abilities, career success, practice, and professional field.

    <u>Learned and inherent abilities before treatment:</u> Students had varied ideas as to what skills were important for good writing, with many mentioning learned skills relating to the technical aspects of writing such as grammar, spelling, punctuation, and relating to their audience. Other students saw inherent abilities such as creativity and imagination as key. Five of eight students in the control group made remarks regarding technical aspects such as "of course grammar" and "being able to express yourself well grammatically." In addition, other students stated an understanding of the topic and being able to relate the topic to the audience also was important. In looking at inherent abilities, one student said, "I think you have to have an imagination." In the treatment group, eight of ten students also said they believed grammar and technical skills were important learned abilities. Comments such as "You need to be able to organize your thoughts well, be able to spell and have good grammar" were common. Many students also mentioned various, less tangible inherent abilities such as creativity, imagination, and good ideas.

    <u>Learned and inherent abilities after treatment:</u> After the treatment, student ideas about learned and inherent abilities remained consistent. Seven of eight students in the control group felt grammar and sentence/essay structure were critical skills for writing well. Student comments such as "good sentence structure," "organization is a big thing," and "grammar for sure" were common. One student found that after the class, the ability to relate his thoughts to others was important. Inherent abilities like creativity, patience, tone, and targeting your audience were also important. In the treatment group, nine of ten students agreed grammar was integral to good writing, but also stressed inherent abilities

such as imagination and creativity as key. One student in particular stated, "You don't have to have much skill, just creativity."

Career success prior to treatment: Students in both the control and treatment groups rated proficient writing skills as at least important for college graduates. Students saw writing skills as vital to career success. Six of eight students in the control group felt the course would be beneficial to them and their future success. Additionally, student comments such as "employers should really look at that" and "you need to have some form of writing skills in whatever you go into" were common. One student felt very strongly about the importance of writing in career success. He stated, "I think especially in this modern society it's very important no matter what you're doing." Eight of ten students in the treatment group also saw the correlation between writing skills and career success. Students made comments such as "I think in pretty much any job you also need to have that skill" and "you have to be able to communicate with people other than verbally" that were reflective of the importance of writing. One student commented that "you don't want to get into the real world and look like you've gone through and gotten your degree and you can't write."

Career success following treatment: Student belief about career success as a result of proficient writing remained consistent after the treatment. In the control group, seven of eight students felt writing was important and felt the course had been beneficial to them. After the class, several students saw writing as more important than they originally thought. One student remarked, "Anymore people with college degrees are going into management positions and in a management position you have to write all kinds of things." Nine of ten students in the treatment group, after treatment, maintained writing

was still important and the course had benefited them. Student comments such as "you need to know it for everything, no matter what field you go into" and "if you were tasked with doing that in your future job you have that experience and know how to do it" were common. However, one student shifted his perception after the class and felt writing was not very important. He said, "A lot of time I don't think communication goes beyond inner office kind of stuff, it's more casual for the most part."

Practice prior to treatment: Students had varied opinions on whether the course would help to refresh them on their writing skills. In the control group, six of eight students believed the course would help improve their writing skills, but were not in agreement to what degree. Many students believed it would "be a great class to get me up to par" and "every course helps to improve you in some way." However, some students felt they were "already a halfway decent writer anyway" and the course would probably not help to improve their skills. In the treatment group, nine of ten students felt the course would help to improve their writing skills. Students made comments such as "it's something I know I've been needing" and "the more you write the better you get." One student did not feel it would really help to improve his writing skills.

Practice after treatment: Treatment did not drastically affect student's beliefs about the benefits of the course. Six of eight students in the control group remained consistent in their opinions as to whether the course would help to improve their writing skills. Students commented that "you definitely learned what was wrong and what you needed to work on." There were several students who did not feel the course had helped them though. In the treatment group, all ten students stated the course had benefited them and improved their writing skills. Students believed the course had helped on

"professional stuff," and "helped fine tune my punctuation and grammar." One student, in particular, recognized he was making mistakes and "I've come to realize that I was doing stuff wrong, and I needed to work on them."

Professional field before treatment: While many students felt the course would be beneficial to them, it was often dependent upon their desired field of study. All eight students in the control group felt "there are definitely some majors or professions where people won't write as much" and "it really depends on what field you're going into." In the treatment group, all ten comments by students were similar. Students agreed writing was important, but dependent on the profession as to how much it would be used. Students felt writing was important "kinda depending on what field you go into" and "it may be more important for some people than it is for others."

Professional field after treatment: After the treatment, students believed writing was important and were less likely to believe it was dependent on the field one was entering. In the control group, all eight students simply stated writing was important. In the treatment group, all ten students also believed writing remained important and did not mention professional choice as a dictator of writing performance.

Tables 16 and 17 show the comparison between control and treatment groups skills needed for good writing, the importance of writing and the benefit of the course.

Data also was collected from the control and treatment groups using anonymous feedback forms. Students were asked if they felt writing skills were vital to their success upon graduation.

Major Findings: The two major findings of the feedback form analyses were:
1.   Students felt writing was a skill needed in life, and

2.	Writing was viewed as a necessary skill for a professional career.

Data Analyses: Two main themes emerged from the feedback forms regarding the connection between writing significance and career success. The themes were: life skill and career success.

Life Skill: Students (n = 13) saw writing as a necessary skill needed for life. Comments such as "writing is one of those life-long skills" and "it's a valuable asset in

Table 16

Group Pre-Treatment Comparison Regarding Skills, Necessity and Benefit of Course

Control Group	Treatment Group
Grammar of course.	Grammar and an imagination.
Be a good listener and open-minded.	Good communication skills.
It (class) will be the icing on the cake.	Good to learn how to get your point across.
It's important no matter what field you into.	You have to communicate other than go verbally
Great class to get me up to par.	The more you write, the better you get.

Table 17

Group Post-Treatment Comparison Regarding Skills, Necessity and Benefit of Course

Control Group	Treatment Group
Organization is a big thing.	You don't have to have much skill, just creativity
Probably important no matter what.	Important no matter what field.
Definitely learned what you needed to work on.	Helped fine tune my punctuation and grammar.
Proficient writing skills are very important.	Proficient writing skills are very Important.

the real world" were common. Many students were specific in their belief about the importance of writing in life. Students remarked "poor writing skills stick out like a sore thumb" and "it is necessary to function in today's world." Even students who did not

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enjoy writing realized the significance of it. One student commented, "I don't like to write, but writing is essential."

Career success: Students (n = 14) said they felt writing skills were very important to their success in a career. Student comments such as "they play a great role in your chances of landing a good job" and "it is a crucial skill to have when working in a professional field" were common. One student felt "employers want people who can write professionally." As with life skills, even those students who do not like to write recognized they must be able to do so in a professional setting. One student commented "I absolutely hate it, but I realize that to be successful in my career I need to be good at it." Additionally, some students who were going into teaching felt they needed to emulate writing skills for their students. One student stated, "I feel it will be important for me to set a good example for my students by using correct writing skills."

Table 18 depicts a thematic matrix of students' beliefs regarding writing as a life skill and necessary to career success.

Table 18

Thematic Matrix of Life Skills and Career Success

Theme	Illustrative Quotes
Life Skill	"Writing is necessary in life." "You need to know how to write to get by in the future." "It is a necessary skill to relay your thoughts and opinions." "We must all be good at it."
Career Success	"If I don't write like a professional, how will the person reading it portray me?" "Writing will be a vital part of my ability to teach." "People will always need to write, especially in professional settings." "Writing will be an important skill for me as a professional."

Summary

Student records indicated a majority of students participating in the study were male (62.1%) with an average age of 21.76 years of age. Of the students who were required to complete the Composition I course, the average grade earned was a C. In the Composition II course, the average grade earned was a B. On the ACT English test, students scored an average of 22.52 on a scale of 1 to 36. However, all students who took the ACT English test divided into three achieving levels: low, middle, and high. The majority (54%) of students scored in the middle range of achievement. Students' scores on the ACT English test in the control and treatment groups were distributed in a range between 10 and 35. Students scored on average a 24.7 on the ACT Reading test, with scores distributed in a range between 12 and 36. The students' grade point avergae was reported on a 4-point scale, with the students earning on average a 3.0.

The first null hypothesis was rejected based on the analyses of data. The quantitative analyses revealed significant differences existed between groups (control and treatment) regarding students' grade in the course after administration of the study's treatment. A significant difference ($p = 0.14$) was observed in the students' overall grade in the class between groups following the treatment. The practical significance of this difference ($^2 = .08$) fell well within the category of a "medium" effect size as defined by Cohen (1977). The second null hypothesis was rejected based on the analyses of data. A significant difference ($p = .021$) was observed in the students' scores on the descriptive writing assignment in the class between groups after the administration of treatment. The practical significance of this difference ($^2 = .14$) fell well within the category defined by Cohen as a "large" effect size (1977). In addition, the third null hypothesis was rejected,

based on the analyses of data. A significant difference ($p = .017$) was observed in the students' scores on the profile/philosophy writing assignment following the treatment. The practical significance of this difference ($^2 = .07$) fell well within Cohen's definition of a "medium" effect size (1977).

Qualitative analyses revealed student attitude toward writing was varied, students had moderate to positive feelings about the Communicating Agriculture to the Public course, and felt it would assist in improving their writing skills. Additionally, students had mixed opinions regarding their own writing abilities based on their perception of the need and purpose for which the writing was conducted, but they did perceive writing as a helpful form of self-expression. The students in the course stated the method in which a writing course was taught, including an instructor's style of teaching, had a correlation with how much an individual learned. Numerous opinions existed on the ideal writing course at the college level, and students believed writing was a process and interaction between instructor and student were key components in a student's writing success. Also, students stated they preferred business writing to other types of writing. Specific skills were not agreed upon by students as necessary to master for good writing, but students did believe proficient writing skills were important for college graduates. Students were not unanimous in their opinion as to whether the course helped to improve their writing skills, but they did view the course as beneficial to their professional success depending on their chosen occupation. Students viewed writing as a life skill and necessary for a professional career.

CHAPTER V

CONCLUSION

Summary

The purpose of this study was to test the hypothesis that students who were taught using a process writing model would improve their writing performance in an agriculture-context course more than those students who were taught using a traditional writing curriculum. The assumption was students who were taught the course following the process writing model guidelines would achieve greater improvement in writing skills, as well as attitude toward the task of writing in general. Writing achievement was measured by student performance on two expository writing assignments using the New SAT[®] Essay scoring guide. In addition, writing ability was measured by students' grade point average in previous English courses at the university level, as well as standardized test scores.

Research Questions

The following research questions guided the study:

1.   What are the selected characteristics of students enrolled in the Communicating Agriculture to the Public (AGCM 3103) course at Oklahoma State University during the fall semester of 2005?

2.   What is the effect of a process writing curriculum on student writing performance in an agricultural-context course, as measured by a writing assessment rubric?

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3. Do students perceive a difference in their perception of writing in an agricultural-context course, based upon their participation in a process writing curriculum?

4. Do students perceive teaching method and instructor style as affecting writing achievement in an agricultural-context communication course?

5. Do students see the necessity for being able to write effectively in their professional life upon graduation, based upon written feedback?

Null Hypotheses

The following null hypotheses guided this study:

$H_0 1$ There is no difference in writing skills between the two study groups as measured by students' grades in the course.

$H_0 2$ There is no difference in writing skills between the two study groups on a descriptive writing assignment as measured by the New SAT® Essay scoring guide.

$H_0 3$ There is no difference in writing skills between the two study groups on a philosophy/profile writing assignment as measured by the New SAT® Essay scoring guide.

Population

The study was conducted using the population of students (N=58) enrolled in one section of the writing-intensive service course AGCM 3103 (Communicating Agriculture to the Public) for the fall 2005 semester at Oklahoma State University.

Group 1. ACGM 3103 students who participated in a traditional writing curriculum during the fall 2005 semester (i.e., control group students).

Group 2. AGCM 3103 students who participated in a process writing model curriculum during the fall 2005 semester (i.e., treatment group students).

Design of the Study

The study employed a post-test only control group design (Campbell & Stanley, 1963) with one treatment group and one control group. Each classroom was randomly assigned to either the control or treatment group, with the "unit of analysis" being by student and classroom. In addition to the random assignment to groups, the two groups (control and treatment) were pre-tested to determine level of equivalence concerning basic writing aptitude (Campbell & Stanley, 1963). Comparisons were made between group means on each of the post-test measures following the administration of the treatment. The research design is described below in Figure 5.

Figure 4

Post-test Only Research Design (Campbell & Stanley, 1963)

Control	R	_____	O_D	O_P
Treatment	R	X	O_D	O_P

Figure 5: Creswell (2005) post-test only design: R = random assignment, O_D = descriptive writing post-test measure, O_P = profile/philosophy writing post-test measure, and X = treatment.

Treatment

The treatment consisted of teaching two expository writing assignments of equal values using the process writing model curriculum as discussed in the literature. The treatment was adapted from a secondary study completed in an English classroom (Carney, 1996). The process writing technique (Unger & Fleischman, 2004) consisted of five distinct steps students undertook in completing the assignment: prewriting, drafting, revising, editing, and publishing. As used in this study at the post-secondary level, the treatment was delivered during six days of class time in the fall 2005 semester. The two

assignments used with this treatment were a descriptive writing essay and a personal profile/philosophy statement.

A comprehensive view of the treatment implemented in this study is presented in Table 18. The treatment described below was delivered only to treatment group students. While control group students were told their class would be participating in the research project, the control group instructor was instructed to make no change relative to the teaching of writing in the Communicating Agriculture to the Public course.

The dependent variable in the study was student writing achievement. Differences between the control and treatment groups were measured on three levels: 1) the students' final grade in the Communicating Agriculture to the Public course; 2) the students' score on the descriptive essay using the New SAT® Essay scoring guide; and 3) the students' score on the profile/philosophy essay using the New SAT® Essay scoring guide.

Data Collection

Data collection occurred in fall 2005 for both the control and treatment groups. The pre-measure and two post-tests administered to the students were quantitative in nature to assess level of equivalency and improvement in their writing abilities, respectively, as a result of the process writing model curriculum treatment. The anonymous feedback forms and interviews were qualitative in nature and provided rich details and information for the study that could not be garnered using quantitative measures alone. The quantitative data was entered into an Excel spreadsheet and analyzed through SPSS. An independent samples *t-test* was run for comparison and to analyze the means of the control and treatment groups. Additionally, the qualitative data

was coded and themed, with appropriate quotes by students earmarked for triangulation

in the study findings.

Table 19

Process Writing Model Curriculum

Treatment Group Students
1. Pre-Writing
Brainstorming on topic Pre-Writing Question Sheet   o Five prompts to assist students in thinking about topic and making an outline for their paper.
2. Drafting

1st Draft (D1)
   o Students bring rough draft of paper to class for self-analysis. Draft can have errors, but should be legible.
   o Students must make a list of goals they wish to change for 2nd draft.

3. Revision
Students must revise 1st draft and be prepared to read their 2nd draft aloud to a partner for peer critique.
Drafting

2nd Draft (D2)
   o Peer Conferencing
   o Students choose a peer and review one another's 2nd draft. Students read aloud their essays and make suggestions for improvement using the Praise, Question, Polish technique (Neubert & McNelis, 1986).

Revision
Students must revise essays based upon peer feedback of 2nd draft 3rd draft is due to instructor for constructive critique and edits.
4. Editing

3rd Draft (D3)
   o Instructor will underline or circle errors, not correct them.
   o Instructor will place a check in the margin by a line that contains an error so the student can identify it.
   o Students should use instructor comments to produce final draft.

5. Publishing
Final draft to be turned in to instructor for a grade. Class discussion takes place about papers and how students felt about process upon completion.

Measures

Students in both the control and treatment groups were given a pre-measure and two post-test writing assessments. The writing assessments, as well as the student's overall grade in the course, provided data to test the study's hypotheses. Additionally, students in the control and treatment groups were given anonymous feedback forms to complete, and a random sampling of students in the control and treatment groups were asked to participate in interviews with the researcher regarding writing, their attitude, and the course. The interviews were conducted during the first and last weeks of classes during the fall 2005 semester. The feedback forms were distributed at the mid-term of the semester and again during the last week of classes.

Quantitative

Level of equivalency was determined by comparing the pre-measure between control and treatment groups. The pre-measure was administered at identical times in the control and treatment classrooms and was given during the first week of classes, before instruction in the course began. The pre-measure provided students with a writing prompt and required students to write for 30 minutes. The writing prompt for the pre-measure asked students to write about a timely agricultural issue relevant to their field of study (major) within agriculture. The students were instructed to plan and write an essay in which they developed their points of view and supported their position with reasoning and examples taken from readings, studies, experiences, or observations.

The post-tests measured differences between students in the control and treatment groups. The two post-tests were expository in nature; one was a descriptive essay in which the students were asked to describe in detail an object, place, event, or topic of

their choice. The second post-test was a personal philosophy/profile statement in which the students were told to describe a particular philosophy they held (such as teaching, leadership, etc.) or provide a personal profile about themselves. The post-test writing artifacts were scored using the New SAT® Essay scoring guide by a panel of experts. In addition, the students' grades in the course were used to measure differences between students in the two groups.

Qualitative

In an effort to control for fidelity of treatment, both the control and treatment groups were asked to complete two identical anonymous feedback forms at different times during the semester. The students were given the forms at the mid point in the semester and again during the last week of classes. The students were randomly chosen for the interviews and met with the researcher individually in a conference room in the Agricultural Hall building on the Oklahoma State University campus. The researcher prepared an interview schedule (Appendix K) to base questions for the students but allowed for interviewee responses to guide the interview process. The interview schedule consisted of 12 prepared interview questions: a variety of open-ended, closed-ended, scenario-option and likert-scale questions. The interviews ranged in length from 10 to 20 minutes.

<div align="center">Data Analysis</div>

The pre-measure and post-tests were scored by a panel of experts. The anonymous feedback forms and student interviews were analyzed by the researcher.

Quantitative

The panel of experts scored the pre-measure and post-test essays holistically. Camara (2003) states, "This approach is based on the assumption that an essay or writing sample can be graded best by evaluating the whole essay, not by scoring the essay on several different factors like grammar, spelling, organization, and structure and then summing these parts to produce a total score" (p. 1). The panel was trained similarly to that suggested by The College Board. The three readers, or panel of experts, were used to score the essays and consensus was established among the panel before a final score was given. The panel read the essays independently and then met as a group with the researcher to come to consensus. The researcher met with the panel to ensure scoring was completed in an academic and fair fashion. The panel scored three sample essays and developed consensus for the criteria used in each of the scores on the rubric. Prior to scoring the data used in the study, the panel honed their scoring skills by scoring 19 artifacts from the researcher's pilot study. The researcher noted difficulty in coming to consensus most likely resulted from the order individual panel members read the pre-writing measure and the two post-tests.

Frequencies and percentages were calculated for selected demographic data to accurately portray the student participants in the study. An independent samples *t*-test was used to compare the control and treatment group means to address the research hypothesis. All quantitative analysis was completed using the *Statistical Package for the Social Sciences version 13.01*.

<u>Qualitative</u>

The anonymous feedback form was developed by the researcher and given to establish fidelity in the information reported in the random sampling of student interviews. The students interviewed both prior to and following treatment numbered 18 (n=18), and the interviews were conducted solely by the researcher. The students chosen to interview were based on Bryman's theoretical saturation in sampling technique (2004). Because the interviews were voluntary, some students chose not to participate, simply signed up and forgot to attend, or participated in only one of the interviews. The interviews were held in the same room during a specified block of time the first and last week of classes of the 2005 fall semester.

The qualitative data were analyzed through researcher analyses. The anonymous feedback forms and the interviews were recorded, transcribed, coded and themed by the researcher.

<div align="center">Major Findings</div>

Student records indicated students participants in the study were on average 21.76 years of age and the majority were male (62.1%). The average grade earned by students required to take the Composition I course was a C, while the average grade earned in the Composition II course was a B. Students who took the ACT English test naturally divided into three achieving levels: low, middle, and high, and the majority (54%) of students scored in the middle range of achievement. Students scored an average of 22.52 on a scale of 1 to 36 on the ACT English test, and the scores in the control and treatment groups were distributed in a range between 10 and 35. Students scored on average a 24.7

on the ACT Reading test, with scores distributed in a range between 12 and 36. Students

earned on average a 3.0 grade point avergae on a reported 4-point scale.

Based on the analyses of data, all three null hypotheses were rejected. The

quantitative analyses determined significant differences existed between groups (control

and treatment) regarding students' grade in the course following the study's treatment. A

significant difference (p = .014) was observed in the students' overall grade in the class

between groups following the treatment. Equality of variances was assured with a

Levene's Test (F_{max} = .678). The practical significance of this difference (^{2} = .08) fell

well within the category of a "medium" effect size as defined by Cohen (1977). The

second null hypothesis was rejected as well. A significant difference (p = .021) was

observed in the students' scores on the descriptive writing assignment in the class

between groups after the administration of the treatment, as measured by the New SAT$^®$

Essay scoring guide. Equality of variances was assured with a Levene's Test (F_{max} =

.483). The practical significance of this difference (^{2} = .14) fell well within the category

defined by Cohen (1977) as a "large" effect size. The third null hypothesis also was

rejected based on the analyses of data. A significant difference (p = .017) was observed in

the students' scores on the profile/philosophy writing assignment following the treatment,

as measured by the New SAT$^®$ Essay scoring guide. Equality of variances was assured

with a Levene's Test (F_{max} = .058). The practical significance of this difference (^{2} = .07)

fell well within Cohen's (1977) definition of a "medium" effect size.

Qualitative analyses revealed student perception of writing was varied, students

had moderate to positive feelings about the Communicating Agriculture to the Public

course and felt it helped to improve their writing skills. Additionally, students had mixed

opinions regarding their self-perceived writing abilities based on their attitude toward

writing, but students did feel writing was a helpful form of self-expression. The students

believed the method in which a writing course was taught, including an instructor's style

of teaching, had a direct correlation with how much they learned. Numerous opinions

existed on the ideal writing course at the college level, but students felt writing was a

process and interaction between instructor and student was important to a student's

success. Students voiced a preference for business writing rather than other types of

writing. While specific skills were not agreed upon by students as necessary to master for

good writing, students stated proficient writing skills were important for college

graduates. Students were not in agreement as to whether the course helped to improve

their writing skills but did view the course as beneficial to their professional success

depending on their chosen profession. Students felt writing was a life skill and necessary

for a professional career.

<div align="center">Conclusions</div>

Conclusions were based on the findings of the five research questions that guided

the study.

1. What are the selected characteristics of students enrolled in the

   Communicating Agriculture to the Public (AGCM 3103) course at

   Oklahoma State University during the fall semester of 2005?

The conclusion drawn from this study concerning research question one was the

majority of student participants were male and on average 21 years of age. Unless

designated by the university, students were required to take the prerequisite Composition

I course and on average earned a grade of C. The average grade earned in the

Composition II course was one letter grade higher – a B. Of those students who took the ACT English test, the scores divided into three achieving levels: low, middle, and high, with the majority of students scoring in the middle range of achievement.

Students scored an average of 22.52 on a scale of 1 to 36 on the ACT English test, and the scores in the control and treatment groups were distributed in a range between 10 and 35. On the ACT Reading test, students scored on average a 24.7, with scores distributed in a range between 12 and 36. On a 4.0-point grade scale, students earned an average grade point average of 3.0.

2. What is the effect of a process writing curriculum on student writing performance in an agricultural-context course, as measured by a writing assessment rubric?

The conclusion drawn from this study concerning research question two was a process writing model curriculum did result in a significant increase ($p < .05$), within this particular population, in student performance as measured by students' overall grade in the course and scores on two writing assignments using the New SAT® Essay scoring guide.

3. Do students perceive a difference in their perception of writing in an agricultural-context course, based upon their participation in a process writing model curriculum?

The conclusion drawn from this study concerning research question three was, student perception of writing was varied, within this particular population, based on a number of variables both before and after treatment was administered. Variables such as the topic of the writing, as well as length, played a role in students' attitudes. Prior to the

treatment, students' feelings were moderate to positive about the course and the benefits it afforded them. After treatment, student perception about writing remained consistent. Students felt they had really learned a lot, and the course had been helpful in improving their writing skills. Students had mixed opinions regarding their self-perceived writing abilities based on their attitude toward writing; however, students did feel writing was a helpful form of relaying their opinion.

    4.   Do students perceive teaching method and instructor style as affecting writing achievement in an agricultural-context communication course?

The conclusion drawn from this study concerning research question four was within this particular population, students in both groups perceived methodology and instructor style as having an effect on how much they learned in an agricultural-context writing course. Both prior to and following treatment, students believed both instructor and student attitude played a role in the amount of learning that takes place. Additionally, varying teaching style and interface with students was seen as important to students both before and after treatment. Before treatment, students expressed a preference for a writing course that helped prepare them for their future outside of the classroom, while after treatment, students indicated business writing was a benefit for them. Additionally, while student opinion varied widely on the ideal writing course at the college level, students did feel writing was a process necessary for learning to take place, and instructor feedback and interaction with students was important to a student's success.

    5.   Do students see the necessity for being able to write effectively in their professional life upon graduation, based upon written feedback?

The conclusion drawn from this study concerning research question five was within this particular population, both before and after treatment, students in both groups had mixed opinions on the type of skills needed to be considered a good writer. However, skills seemed to be grouped under technical, learned skills like grammar, spelling, punctuation, and inherent abilities such as creativity and imagination. Regardless of treatment, students saw proficient writing skills as, at a minimum, important for college graduates. While students were not in agreement as to whether the course helped to improve their writing skills either before or after treatment, many did feel practice in writing could only help to improve their skills. Depending on their chosen profession and whether they would use writing frequently, students did view the course as beneficial to their professional success. Overall, students felt writing was a skill needed in life and a needed ability for professionals.

Implications

Numerous writing movements have come and gone both within and outside the doors of the English classroom throughout the years in an attempt to address the necessity of writing skills for students in the educational system and beyond. However, research has provided little guidance as to a possible best teaching method for improving students' writing skills at the post-secondary level. While a process writing model curriculum has been proven as the preferred manner in elementary and secondary classrooms (Sylvan, 2005; Inside Writing Research Base, 2005), addressing writing improvement at the post-secondary level has seen little priority until recently. With the College Board's 2004 national reports on writing, a newfound emphasis has been placed on the importance of writing at the college level. Colleges and universities are now faced with the challenge of

improving student's writing performance and preparing them for the real world (Achieve, 2004; College Board, 2004; Enders, 2001; Light, 2003).

In addressing this need for writing improvement in the United States, this study proved to be consistent with the findings of many researchers regarding the benefits of a process writing model curriculum. As the National Writing Project and Nagin (2005) state, "Most research today supports the view that writing is recursive, that it does not proceed linearly but instead cycles and recycles through subprocesses" (p. 25). Additionally, the results from this study support Harris and Schaible's (1997) findings that writing within a subject matter helps assist students in life as a whole. The findings also were consistent with Cobia's (1986) view that context-specific courses allow students to see the applicability of writing within their chosen profession. In addition, this study supported early claims made by noted experiential learning theorists John Dewey (1938) and Jean Piaget (1952) that students should learn by doing. To improve writing, students agree they must have interaction and feedback from instructors, and practice can only serve to help improve their writing performance. The results imply a process writing model curriculum, as tested in an agricultural-context, allows students to *learn* through the five steps of the process, rather than simply meeting an end purpose and receiving a grade.

The treatment outlined in this study was administered during only one semester, but the results did reveal that within this particular population, a process writing model curriculum did positively effect the post-treatment performance of treatment group students on all measures (see Tables 6-8). While the generalizability of these results should not extend beyond the 58 students involved in this study, serious consideration

should be given to investigating the possibility the treatment described could have similar effects on other groups of students studying writing in a context-specific course.

The findings from this study do not suggest participation in a process writing model curriculum influences students' attitude toward writing. However, student comments support Borgese (2005) in her view that process writing allows writing to be a skill achievable by all students and can help relieve anxiety toward it. Students perceived teaching method and instructor style as influencing how much students learned in a course, yet the results of this study do not indicate method and style have any more effect in an agriculture-context course than any other context-specific course. Student comments do, however, point to the ability to write effectively as essential to a student's professional life upon graduation. The student's views support Scanlon and Baxter's (1993) recommendation that courses in agriculture should emphasize the importance of writing in a student's career. Additionally, the results garnered by student comments indicate writing is a skill students must master to be successful in their careers (Borgese, 2005; Stowers & Barker, 2003).

Recommendations

Recommendations for Research

While this study proved effective in an agriculture-context course at Oklahoma State University, this experiment should be replicated in other context-specific writing courses at the university to determine if students outside of an agricultural context can benefit from a process writing model curriculum. Additional investigation should be conducted regarding the evaluation instrument used in this study. Because the comparison of group scores on the New SAT® Essay scoring guide did show a significant

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difference favoring the treatment group, this rubric should be analyzed to determine its success in scoring the SAT® Essay and thereby its usefulness in scoring college-level writing artifacts.

The treatment used in this study followed an accepted and widely used five-step process writing model approach; however, the expansion of each step was based on a study conducted in a secondary classroom. Therefore, additional inquiry should be conducted to determine the most effective sub-steps to use in a process writing curriculum model at the college level. Perhaps allowing students to choose their own partners in the peer conferencing sub-step of the drafting stage was not as effective as instructor-chosen partners with unmatched abilities would have been. In addition, because the researcher conducted the treatment, it would be appropriate in a replicated study to verify the teaching of the process writing model curriculum by an experienced instructor in that methodology. Replicated studies would benefit from either videotaping the process writing lessons for verification by an expert, or requiring an expert to be present when the process writing was taught in the classroom. This step would serve to better ensure fidelity of treatment.

While student perceptions of the process writing model curriculum and the course overall were measured through a random sampling of interviews both before and after treatment, as well as anonymous feedback forms, instructor perceptions were not evaluated. Further investigation should be pursued that focuses on the attitude of the instructor toward a process writing model curriculum, as well as writing in general. In addition, because the post-interviews were conducted before a final grade in the class was assigned, students may have altered their responses to please the instructor. Future

research should involve therefore interviewing students after treatment as well as after the completion of the course when student grades have been posted. This problem also could be addressed through the use of an outside person conducting the interviews. It would be also beneficial for the anonymous feedback forms to be presented in a pre- and post-treatment fashion, much like the student interviews. This format would allow for yet another comparison.

Effective writing is a skill employers and educators agree upon, yet there is discrepancy between what high school and college instructors stress as important to master (ACT, 2000). Additionally, results from this study indicate students are not in agreement as to whether technical skills or inherent abilities are most critical to effective writing. Therefore, research should be conducted that assesses what both high school and college instructors' deem as important for students to know about writing as a whole. Perhaps if consensus can be reached between the different education levels, students will be better prepared upon entering college and have less need for remedial writing assistance in all classrooms.

Research regarding writing advocates the need for improving students' writing skills, and points to the college classroom as the laboratory for doing so to guarantee career success for students in the future (College Board, 2004; Monroe, 2003). Therefore, educators at the post-secondary level should note the results of this study and the implications it merits with regard to a possible "highly effective" teaching method for writing in college classrooms.

Finally, this experiment should be replicated outside of the state of Oklahoma with a national population at the post-secondary level so additional generalizations may be drawn.

Recommendations for Practice

Based on the findings of this study, a process writing model curriculum did have a positive effect on improving student writing performance. In light of this study, instructors at the college level should be encouraged to work toward further integration of a process writing model curriculum into their classrooms.

Based on evaluation using the New SAT® Essay scoring guide, this study revealed process writing is effective in the post-secondary classroom. The New SAT® Essay scoring guide, or rubric, should be further examined as a means of evaluation for student writing. Instructors at the high school and college level should consider implementing this rubric as a means of providing consistent scoring for student writing. A consistency in scoring could additionally serve to define what "good" or "proficient" writing skills are for students. While the interviews with students in this study used the terminology "good" and "proficient," the researcher did not verify a mutual agreement upon definitions with students.

The five-step process writing model of instruction employed in this experiment proved to be effective. As such, a deeper inquiry by writing experts as to the specific implementation of the steps should be addressed. Special consideration should be given to the number and types of activities implemented under each step in the process writing model curriculum.

Results from this study proved a process writing model curriculum can be effective at the college level, yet limited literature exists that documents research studies that have used the curriculum. Therefore, because this study was modified from a study conducted at the high school level, further guidelines and instructions for implementing the curriculum need to be investigated. As a means for providing additional guidelines to follow, it is suggested instructors consider expert opinion or supplemental software in the implementation. Computer software (such as that offered by Merit) exists that is designed to assist students in writing an essay subscribing to the five-step process writing model curriculum.

The dilemma of how best to improve student writing performance is a timely issue being debated at all levels of education. The College Board (2004) suggests a writing revolution must take place that propels writing to the forefront of education. With national urgency placed on the issue, many institutions are revitalizing their writing instruction (Bartlett, 2003) and instructors in academia therefore, should be encouraged to place substantial effort toward further refining and developing a process writing model curriculum that reveals an improvement in students' writing skills and prepares them adequately for a successful professional career.

Finally, the results of this study could prove to enable college and university instructors in context-specific disciplines with an effective means for integrating writing in a meaningful manner into their various curricula.

REFERENCES

Aaron, D. K. (1996). Writing across the curriculum: putting theory into practice in animal science courses. *Journal of Animal Science, 74*, 2810-2827.

Achieve, Inc. (2004). *Do Graduation Tests Measure Up?* Retrieved October 14, 2005, from http://www.achieve.org/dstore.nsf/Lookup/TestGraduation-FinalReport/$file/TestGraduation-FinalReport.pdf

ACT Newsroom (2000, April 12). *What reading and writing skills should college-bound students have? High school and college teachers disagree.* Retrieved October 14, 2005, from http://www.act.org/news/releases/2000/04-12-00.html

Alamargot, D. & Chanquoy, L. (2001). *Through the Models of Writing.* The Netherlands: Kluwer Academic Publishers.

Applebee, A. N. (2000). A New Framework for Understanding Cognition and Affect in Writing. In R. Indrisano and J.R. Squire (Eds.) *Perspectives on writing: Research, theory and practice.* (pp. 90-110). Newark, Delaware: International Reading Association.

Applebee, A. N. (1984, Winter). Writing and reasoning. *Review of Educational Research, 54*(4), 577-596.

Bartlett, T.(2003, January 3). Why can't Johnny write, even though he went to Princeton: Many top colleges fear that their students lack basic composition skills. *The Chronicle of Higher Education, 49*(17), A39. Retrieved October 14, 2005, from http://ww.chronicle.com/weekly/v49/i17a03901.htm

Bazerman, C., Little, J., Bethel, L., Chavkin, T., Fouquette, D. & Garufis, J. (2005).
Reference guide to writing across the curriculum. Parlor Press and Writing
Across the Curriculum Clearinghouse: UC, Santa Barbara.

Biggs, J. (2003). *Teaching for quality learning at university.* Buckingham: The Society
for Research Into Higher Education & Open University Press.

Biggs, J. (1988). Approaches to learning and essay writing. In. R.R. Schmeck (Ed.),
Learning strategies and learning styles (pp. 185-228). New York: Plenum.

Biggs, J. B. (1987). *Student approaches to learning and studying.* Melbourne: Council of
Educational Research.

Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956).
Taxonomy of educational objectives book I: Cognitive domain. New York: David
McKay Coompany, Inc.

Boscolo, P. & Carotti, C. (2003). Does writing contribute to improving high school
students' approach to literature? *L1 – Educational Studies in Language and
Literature, 3*, 197-224.

Boyer, E. (1983). *High School: A Report on Secondary Education in America*. New
York: Harper and Row.

Bracht, G. H. & Glass, G. V. (1968, Nov.). The external validity of experiments.
American Educational Research Journal, 5(4), 437-474.

Brainy Quote (n.d.). Retrieved February 16, 2006, from
http://www.brainyquote.com/quotes/authors/e/e_m_forster.html

Brufee, K. A. (1983). Writing and Reading as Collaborative or Social Acts. In J.N. Hays
(Ed.) *The Writer's Mind: Writing as a Mode of Thinking*. (pp. 159-169). Urbana,

Illinois: National Council of Teachers of English.

Bryman, A. (2004). *Social Research Methods* (2nd ed.). New York: Oxford University Press, Inc.

Camara, W. J. (2003, July). Scoring the essay on the SAT writing section. *The College Board Research Summary, RS-10*, 1-3.

Camp, W. G. (2001). Formulating and evaluating theoretical frameworks for career and technical education research. *Journal of Vocational Education Research, 26*(1), 1-17.

Campbell, D. T. & Stanley, J. C. (1963). *Experimental and Quasi-Experimental Designs for Research.* Chicago: Rand McNally College Publishing Company.

Carney, B. (1996). Process writing and the secondary school reality: A compromise. *English Journal, 86*(6), 28-35.

Christin, A. (Ed.). (2001). *A History of Writing.* Spain: Flammarion.

Cobia, D. W. (1986, June). The whys and hows of incorporating writing in agricultural courses. *NACTA Journal, 30*(2), 22-25.

Cohen, J. (1977). *Statistical power analysis for the behavioral sciences* (rev. ed.). New York: Academic Press.

Coker, F. H. & Scarboro, A. (1990, April). Writing to learn in upper-division sociology courses: Two case studies. *Teaching Sociology, 18*(2), 218-222.

The College Board Report of the National Commission on Writing in America's Schools and Colleges (2003, April). *The Neglected "R", The Need for a Writing Revolution.*

The College Board and the National Commission on Writing for America's Families,

Schools, and Colleges (2005, July 5). *State report puts high premium on writing skills*. Retrieved October 14, 2005, from

http://www.writingcommission.org/pr/message-from-state.html

The College Board Report of the National Commission on Writing for America's Families, Schools, and Colleges (2005, July 5). *Writing: A Powerful Message from State Government.*

The College Board Report of the National Commission on Writing for America's Families, Schools, and Colleges (2004, September). *Winning: A Ticket to Work... or a Ticket Out, A Survey of Business Leaders.*

Cook, T. D. & Campbell, D. T. (1979). *Quasi-experimentation: Design and analysis issues for field settings.* Chicago: Rand McNally.

The Corporate Citizen (June/July 2004). *Interview with Secretary of Education Rod Paige*.

Creswell, J. W. (2005). *Educational Research: Planning, conducting and evaluating quantitative and qualitative research (2nd ed.).* Upper Saddle River, NJ: Pearson Education, Inc.

Creswell, J. W. (1994). *Research design: qualitative and quantitative approaches.* Thousand Oaks, CA: Sage Publications.

Daly, J. A. (1975a). The empirical development of an instrument to measure writing apprehension. *Research in the Teaching of English, 9*, 242-249.

Daly, J. A. & Miller, M. D. (1975). Apprehension of writing as a predictor of message intensity. *Journal of Psychology, 89*, 175-177.

Denzin, N. K. & Lincoln, Y. S. (Eds.). (1998). The landscape of qualitative research.

Thousand Oaks, Ca.: Sage Publications, Inc.

Dewey, J. (1938). *Experience and Education.* New York: Macmillan.

Elbow, P. (1994). *Writing for learning—not just for demonstrating learning.* University of Massachusetts, Amherst, 1-4.

Elevate writing instruction (May 7, 2003). *USA Today,* p. A.10.

Emig, J. (1977, May). Writing as a mode of learning. *College Composition and Communication, 28*(2), 122-128. Retrieved November 11, 2004, from JSTOR database.

Enders, D. (2001, Nov/Dec). Crossing the divide: a survey of the high school activities that best prepare students to write in college. *The Clearing House, 75*(2), 62-67. Retrieved November 9, 2004, from Proquest database (94343097).

Faigley, L (1985). Nonacademic Writing: The Social Perspective. In L. Odell & D. Goswami (Eds.) *In Writing in Nonacademic Settings.* (pp. 231-340). New York: Guilford Press.

Faigley, L. & Miller, T. P. (1982, October). What we learn from writing on the job. *College Teaching,* 44(6), 557-569.

Flower, L. (1994). *The construction of negotiated Meaning: A Social Cognitive Theory of Writing.* Carbondale: Southern Illinois University Press.

Goldstein, A. A. & Carr, P. G. (1996, April). Can students benefit from process writing? *NAEPFacts, 1*(3), 1-6. Retrieved January 12, 2005, from http://nces.ed.gov/pubs96/web/96845.asp

Great Source Education Group (n.d.). *Inside Writing Research Base*, 1-4. Retrieved October 5, 2005, from

www.greatsource.com/grants/downloads/IW_Research_Base.pdf

Grimes, S. K. (1997). Underprepared community college students: Characteristics,

persistence, and academic success. *Community College Journal of Research &*

Practice, 24(10), 47-57.

Hairston, M. (1982, Feb.). The winds of change: Thomas Kuhn and the revolution in the

teaching of writing. *College Composition and Communication, 33*(1), 76-88.

Harris, D. E. & Schaible, R. (1997, Spring). Writing across the curriculum can work.

Thought & Action Journal, 31-40.

Harris, P. (2005, March 15). What do college students think about writing? *The Council*

Chronicle. Retrieved January 13, 2006, from

http:www.ncte.org/about/over/inbox/news/120007.htm

Hayes, J. R. (2000). A New Framework for Understanding Cognition and Affect in

Writing. In R. Indrisano and J.R. Squire (Eds.) *Perspectives on writing: Research,*

theory and practice. (pp. 6-44). Newark, Delaware: International Reading

Association.

Herren, R.V. (1991). *The agriculture dictionary.* Albany, N.Y.: Delmar Publising.

Hill, M. (1992, November). Writing to learn: process writing moves into the curriculum.

Electronic Learning, 12(3), 20-24.

Johnson, J. & Holcombe, M. (1993, Jan/Feb). Writing to learn in a content area. *Clearing*

House, 66(3), 155-158.

Johnson, K. & Johnson, H. (Eds.) (1998). *Encyclopedic Dictionary of Applied*

Lingustics. Oxford: Blackwell.

Kalman, J. & Kalman, C. (1998). Writing to learn. *Class Action, 1*(10), 1-2.

Kastman, L. M. & Booker, S. L. (1998, April). Writing across the disciplines in

    agriculture. *Language and Learning Across the Disciplines, 2*(3), 36-43.

Kear, D. J., Coffman, G. A., McKenna, M. C. & Ambrosio, A. L. (2000, September).

    Measuring attitude toward writing: a new tool for teachers. *Reading Teacher*

    54(1). Retrieved August 19, 2005, from Academic Search Elite database

    (00340561).

Keppel, G. (1991). *Design and analysis: A researcher's handbook* (3rd ed.). New Jersey:

    Prentice Hall.

Klein, P. D. (1999). Reopening inquiry into cognitive processes in writing-to-learn.

    Educational Psychology Review, 11(3), 203-270.

Knudson, R. E. (1995, Nov/Dec). Writing experiences, attitudes, and achievement of first

    to sixth graders. *Journal of Educational Research, 89*(2). Retrieved August 19,

    2005, from Academic Search Elite (00220671).

Lavelle, E. (1993). Development and validation of an inventory to assess processes in

    college composition. *British Journal of Education Psychology, 63*, 489-499.

Lavelle, E., Smith, J. & O'Ryan, L. (2002). The writing approaches of secondary s

    students. *British Journal of Educational Psychology, 72,* 399-418.

Lavelle, E. & Zuercher, N. (2001). The writing approaches of university students. *Higher*

    Education, 42, 373-391.

Lehr, F. (1995). Revision in the writing process. *ERIC Digest.* Retrieved March 15, 2005,

    from Eric Digest database (ED379664).

Lieberman, A. & Wood, D. R. (2002, March). The national writing project. *Educational*

    Leadership 59(6), 40-43. Retrieved November 10, 2004, from Academic Search

Elite database (6504029).

Light, R. J. (2003, Fall). Writing and students' engagement. *Peer Review 6*(1), 28-31.

Manzo, K. K. (2005, Feb. 2). Educators hope SAT's new essay will bolster writing in

schools. *Education Week, 24*(21), 17.

McLeod, S. H. (1989, Oct.). Writing across the curriculum: the second stage, and beyond.

College Composition and Communication, 40(3), 337-343.

Mitchell, E. & Bavaria, R. E. (2005). Academic writing research. *Sylvan Learning*

Center, 1-3.

Monroe, J. (2003, Fall). Writing and the disciplines. *Peer Review, 6*(1), 4-7. Retrieved

November 18, 2005, from Proquest database (592166031).

Moss, F. (1995). Perceptions of communication in the corporate community. *Journal of*

Business and Technical Communication, 9(1), 63-76.

Murray, D. M. (1973, Dec.). Why teach writing—and how? *The English Journal, 62*(9),

1234-1237.

National Writing Project & Nagin, C. (2003). *Because Writing Matters.* San Francisco,

California: Jossey-Bass.

Neubert, G. A. & McNelis, S. J. (1986, April). Improving writing in the disciplines.

Educational Leadership, 43(7), 54-58.

The New SAT®: A Guide for Admission Officers, 2005. Reprinted by permission of the

College Board, the copyright owner.

Ochsner, R. & Fowler, J. (2004, Summer). Playing devil's advocate: evaluating the

literature of the WRITING ACROSS THE CURRICULUM/WID movement.

Review of Educational Research, 74(2), 117-140. Retrieved

November 12, 2004, from Proquest database (690561641).

Orr, T. B. (2003, Feb/Mar). How do I write thee? Let me count the ways . . . *Career World, 31*(5). Retrieved September 12, 2005, from Academic Search Elite database (07441002).

Pajares, F. (2003). Self-efficacy beliefs, motivation, and achievement in writing: a review of the literature. *Reading & Writing Quarterly, 19,* 139-158.

Parks, S. & Goldblatt, E. (2000, May). Writing beyond the curriculum: fostering new collaborations in literacy. *College English, 62*(5), 584-606. Retrieved November 10, 2004, from JSTOR databse.

Paul, R. & Elder, L. (2005, Fall). Critical thinking . . . and the art of substantive writing, part I. *Journal of Developmental Education, 29*(1), 40-41.

Piaget, J. (1952). *The Origins of Intelligence in Children.* New York: International University Press.

Reaves, R. R., Flowers, J. L. & Jewell, L. R. (1993, Fall). Effects of writing-to-learn on the content knowledge, retention, and attitudes of secondary vocational agriculture students. *Journal of Agricultural Education,34* (3), 34-40.

Ridgley, S. K. (2003, February 19). College students can't write? *National Review Online*. Retrieved October 14, 2005, from http://www.national review.com/comment/comment-ridgley021903.asp

Roberts-Nkrumah, L. B. (2005, September). Using writing to promote thinking in a first year agriculture course. *NACTA Journal, 49*(3), 17-23.

Scanlon, D. C. & Baxter, C. A. (1993). An examination of "on-the-job" writing of recent college of agricultural sciences graduates. *Journal of Applied Communications,*

77(2), 1-11.

Sensenbaugh, R. (1990, February). Process writing in the classroom. *Journal of Reading,*
    33(5), 382.

Simonds, R. H. (1960). Skills businessmen use most. *Nation's Business, 18*(11), 88.

Sorenson, S. (1991, June). *Encouraging writing achievement: Writing across the*
    curriculum (ERIC Clearinghouse on Reading, English, and Communication
    Digest #62). Bloomington, Indiana: Indiana University School of Education.
    (ERIC Document Reproduction Service No. EDO-CS-91-05)

Stanley, G. (n.d.). Approaches to process writing. *British Council teaching English –*
    Writing – Creative writing for language practice, 1-3. Retrieved October 14,
    2005, from http://www.teaching English.org.uk/think/write/process_write.dhtml

Stanley, L. C. & Ambron, J. (Eds.) (1991, Spring). *Writing Across the Curriculum in*
    Community Colleges. New Directions for Community Colleges, 73(1). San
    Francisco: Jossey-Bass Inc.

Steele, V. (n.d.). Product and process writing: a comparison. *British Council teaching*
    English – Writing – Creative writing for language practice, 1-3. Retrieved
    October 14, 2005, from
    http://www.teachingEnglish.org.uk/think/write/process_write.dhtml

Stowers, R. H. & Barker, R. T. (2003). Improved student writing in business
    communication classes: strategies for teaching and evaluation. *Journal of*
    Technical Writing and Communication, 33(4), 337-348.

Sublett, M. D. (1993, Winter). A model essay: one way to improve students' writing.
    College Teaching, 41(1), 11-14. Retrieved November 2, 2004, from Academic

Search Elite database (9706122965).

Tchudi, S. N. (1986). *Teaching Writing in the Content Areas: College Level.* National Education Association of the United States.

Teijlingen, E. R. & Hundley, V. (2001, Winter). The importance of pilot studies. *Social Research Update, 35,* 1-7.

Thompson, T. (1987). Marketplace illiteracy. *United States Banker, 98*(1), 48-49.

Tsui, L. (2002, Nov/Dec). Fostering critical thinking through effective pedagogy: evidence from four institutional case studies. *The Journal of Higher Education, 73*(6), 740-763.

Unger, J. & Fleischman S. (2004, Oct). Is process writing the "write stuff"? *Educational Leadership, 62*(2), 90-91. Retrieved October 29, 2004, from Academic Search Elite database (14635606).

Van Rossum, E. J. & Schenk, S. M. (1984). The relationship between learning conception, study strategy and learning outcome. *British Journal of Educational Psychology, 54,* 73-83.

Wade, C. (1995, February). Using writing to develop and assess critical thinking. *Teaching of Psychology, 22*(1), 24-28.

Wade, C. & Tavris, C. (1987). *Psychology* (1st ed.). New York: Harper & Row.

Weirsma, W. & Jurs, S. G. (2005). *Research methods in education* (8th ed.). Boston: Pearson Education, Inc.

Whirry, M. (1999, September 28). Statement on the NAEP 1998 writing report card. Retrieved October 14, 2005, from http://www.nagb.org/naep/whirry/html

White, R. and Arndt, V. (1991). *Process Writing*. London: Longman.

Whittington, M. S. (1995). Higher order thinking opportunities provided by professors in

college of agriculture classrooms. *Journal of Agricultural Education, 36*(4), 32-

38.

Wilford, J. N. (1999, April 6). Who began writing? Many theories, few answers. *The New

York Times*. Retrieved December 14, 2005, from

http://www.english.uga.edu/~hypertxt/040699sci-early-writing.html

APPENDIX A

Institutional Review Board Approval Form

Oklahoma State University Institutional Review Board

Date: Friday, May 13, 2005

IRB Application No   AG0550

Proposal Title: The Effects of a Context Rich Process-Writing Curriculum on Students
Enrolled in an Agricultural Communications Course: A Quasi-experimental
Study

Reviewed and   Exempt
Processed as:

Status Recommended by Reviewer(s): Approved   Protocol Expires: 5/12/2006

Principal
Investigator(s
Danna Kelemen   Dwayne Cartmell
437 Ag Hall   436 Ag Hall
Stillwater, OK 74078   Stillwater, OK 74078

The IRB application referenced above has been approved. It is the judgment of the reviewers that the
rights and welfare of individuals who may be asked to participate in this study will be respected, and that
the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45
CFR 46.
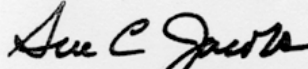
☒ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval
stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol
   must be submitted with the appropriate signatures for IRB approval.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar
   year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are
   unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the
authority to inspect research records associated with this protocol at any time. If you have questions
about the IRB procedures or need any assistance from the Board, please contact Beth McTernan in 415
Whitehurst (phone: 405-744-5700, emct@okstate.edu).

Sincerely,

Sue C. Jacobs, Chair
Institutional Review Board

APPENDIX B

Process Writing Model Curriculum

Process Writing Curriculum

Pre-Writing

Brainstorming on topic
Pre-Writing Question Sheet
    o Five prompts to assist students in thinking about topic and making an
         outline for their paper.

Drafting

1st Draft (D1)
        Students bring rough draft of paper to class for self-analysis. Draft
        can have errors, but should be legible.
        Students must make a list of goals they wish to change for 2nd draft.

Revision
Students must revise 1st draft and be prepared to read their 2nd draft aloud to a partner for peer critique.
Drafting

2nd Draft (D2)
        Peer Conferencing
        Students choose a peer and review one another's 2nd draft. Students
        read aloud their essays and make suggestions for improvement using
        the Praise, Question, Polish technique (Neubert & McNelis, 1986).

Revision
Students must revise essays based upon peer feedback of 2nd draft 3rd draft is due to instructor for constructive critique and edits.
Editing

3rd Draft (D3)
        Instructor will underline or circle errors, not correct them.
        Instructor will place a check in the margin by a line that contains an
        error so the student can identify it.
        Students should use instructor comments to produce final draft.

Publishing
Final draft is to be turned in to instructor for a grade. Class discussion takes place about papers and how students felt about process upon completion.

APPENDIX C

Informed Consent Document

Informed Consent Document

Investigator:
Danna Kelemen

Purpose:
The purpose of this study is to examine how to improve writing skills of students enrolled in an agricultural writing course.

Procedures:
You have been selected to participate in the study based on your enrollment in the course.

Risks of Participation:
There are no known risks associated with this project, which are greater than those ordinarily encountered in daily life.

Benefits:
This study will help the College of Agriculture determine best practices for teaching and improving the writing performance of students in a context specific writing course.

Confidentiality:
Danna Kelemen will keep all electronic data stored on her personal computer, which is password protected. The investigator and her adviser will keep all archived documents (audiotapes, notes, transcripts, and reports) pertaining to the study in a personal storage cabinet at the researcher's residence for five years. After all phases of the study are complete and journal articles written, the data will be shredded, but no later than May 15, 2011. Only the codes will be present in written documents to protect participants' identities. All the data will be reported in aggregate. Only the investigator will code the raw data; thus through each successive phase of the study, participants' identities will be transformed into an amalgamation or composite individuals that represent the mean. Direct quotations used in reporting will be cleaned for any identifying traced back to the participants. The OSU IRB has the authority to inspect consent records and data files to assure compliance with approved procedures.

Compensations:
There is no compensation offered by participating in this study.

Contacts: For information on subjects' rights, contact:
Danna Kelemen   Dr. Sue Jacobs, IRB Chair
Graduate Student   415 Whitehurst Hall
437 Ag Hall   Stillwater, OK 74078
Stillwater, OK 74078   (405) 744-1676
(405) 744-8135

Participant Rights:
Please be assured that your participation in the research portion of the course is voluntary and that you can discontinue the research activity at any time without reprisal or penalty. There are no risks to you if you choose to withdraw from the research at any time. Simply call Danna Kelemen or Sue Jacobs, and we will delete all of your data from our research-associated records.

Signatures:
I have read and fully understand the consent form. I sign it freely and voluntarily. A copy of this form has been given to me.

_____   _____
Signature of Participant   Date

I certify that I have personally explained this document before requesting the participant to sign it.

_____   _____
Signature of Researcher   Date

APPENDIX D

Debriefing Document

Debriefing Document

Project Title:
The Effects of a Content Rich Process-Writing Curriculum on Students Enrolled in an Agricultural Communications Course: An Experimental Study

Investigator:
Danna Kelemen

Purpose:
The purpose of this study was to examine the writing skills of students enrolled in an agricultural writing course and determine if the use of a process-writing model used in an agricultural context would improve students' writing skills upon completion of the course. The investigator conducted extensive evaluation to answer the following questions:

1. What is the effect of an agricultural context process writing curriculum on student writing performance as measured by a writing assessment rubric?
2. Does an agricultural context process writing model affect a student's ability to improve writing skills in an upper level writing course?
3. What are the selected characteristics of students enrolled in the Communicating Agriculture to the Public (AGCM 3103) course at Oklahoma State University during the second summer session and fall semester of 2005.
4. Does a student's attitude toward writing affect their performance in an agricultural context writing intensive course as measured by interviews?
5. Does instructor adherence to a process writing model in an agricultural context course affect student achievement as measured by a pre-post test writing assessment?

Procedures:

1. You were selected to participate in the study based on your enrollment in the course in which a process model for writing was used.
2. Your scores on the ACT standardized test and your college level English course grades were used to help measure the effectiveness of the process-writing approach.
3. The investigator/instructor randomly selected students from the class to interview about their attitude toward writing at the beginning and completion of the course.
4. After the interview was over, the information was transcribed.
5. The investigator/instructor will contact you again only if there are further questions about the things you said during the interview.
6. An anonymous feedback form was collected from all students in the course at two points during the semester.

Risks of Participation:
There were no known risks associated with this project, which are greater than those ordinarily encountered in daily life.

Benefits:
This study will help the College of Agriculture determine best practices for teaching and improving the writing performance of students in a context specific writing course.

Confidentiality:
Danna Kelemen will keep all electronic data stored on her personal computer, which is password protected. The investigator and her adviser will keep all archived documents (audiotapes, notes, transcripts, and reports) pertaining to the study in a locked storage cabinet for five years. After all phases of the study are complete and journal articles written, the data will be shredded, but no later than May 15, 2011. Only the codes will be present in written documents to protect participants' identities. All the data will be reported in aggregate. Only the investigator will code the raw data; thus through each successive phase of the study, participants' identities will be transformed into an amalgamation or composite individuals that represent the mean. Direct quotations used in reporting will be cleaned for any identifying traced back to the participants. The OSU IRB has the authority to inspect consent records and data files to assure compliance with approved procedures.

Compensations:
There was no compensation offered by participating in this study.

Contacts: For information on subjects' rights, contact:
Danna Kelemen   Dr. Sue Jacobs, IRB Chair
Graduate Student   415 Whitehurst Hall
437 Ag Hall   Stillwater, OK 74078
Stillwater, OK 74078   (405) 744-1676
(405) 744-8135

APPENDIX E

Control Group Syllabus

AGCM 3103
Communicating Agriculture to the Public

Summer 2005
MTWR 8:40 – 11:10 a.m.
202 Ag Hall

Instructor
Shelly Sitton
Department of Agricultural Education, Communications and 4-H Youth Development
435 Agricultural Hall
(405) 744-3690
shelly.sitton@okstate.edu
Office hours:

Blackboard site
Blackboard.okstate.edu

Prerequisite
Junior standing or instructor's consent

Course Objectives
> To develop effective communication skills for agricultural issues through written communication methods.
> To develop effective communication skills for agricultural issues through oral communication methods.
> To improve the quality of technical writing skills.
> To enhance the fundamentals of grammar and punctuation.

Required Text
Hacker, Diana. (2003). *A Pocket Style Manual.* Fourth Edition. Boston: Bedford/St. Martin's.

Drop Policy
Refer to the OSU Catalog for an explanation of the University's drop policy.
Important dates for the Summer 2005 semester are as follows:
Last day to drop with no grade and no fees charged . . . . .June 7
Last day to drop with an automatic grade of "W" . . . . .June 24
Last day to withdraw from ALL courses with an assigned grade of "W" or "F" . . . . June 28

Professionalism Statement & Attendance
Professionals in the agriculture, science and natural resource industry are guided by specific values and characteristics. Professional characteristics on which you will be judged in this course include punctuality, attendance, collegial attitude and participation. This course relies extensively on written assignments, discussion and other class interactions; therefore, attendance is crucial to your success. Students will participate in group work, public speaking, written assignments and in-class discussions about topics covered in lecture.

Each attendance day is worth 5 points and is noted in the schedule. During lecture it is taken in the form of free writing assignments. They will be written at the beginning of class; thus, you must attend and complete the assignments in class to receive the points. If you are ill or an emergency occurs, contact (if possible) the instructor (via e-mail or voice mail) prior to the scheduled class time. Otherwise, your attendance and participation are <u>firm</u> expectations.

If you are absent, it is your responsibility to complete previous material. Missed exams and assignments can be made up if the instructor excuses the absence <u>prior</u> to the missed date. If you will be absent for an official University activity, you may be asked to take the exam or do the assignment prior to your absence.

Academic Honesty Statement
Academic honesty is fundamental to the activities and principles of any university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed and presented. Any attempt to gain advantage not given to all students is dishonest whether or not the attempt is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting or collaboration, consult the course instructor.

Special Accommodations
According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and to request accommodations. If any member of a class thinks that he/she has a qualified disability and needs special accommodations, he/she should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services, 315 Student Union. Please advise the instructor of such disability as soon as possible, and contact Student Disability Services to ensure timely implementation of appropriate accommodations. Faculty members have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations.

Strategic Communications Plan
Each student will be assigned to a marketing group. All groups will create a strategic communications plan (12-page minimum) utilizing various media to meet their given objectives surrounding a specific agricultural issue. The plan will propose to deliver a message to a specific audience or audiences for a specifically defined purpose (to inform, to persuade or to change some aspect of the audience's beliefs, behaviors, etc.).

Research Guide
Each student will write a research guide, sometimes called an "annotated bibliography." The research guide is a list of citations to books, articles, and documents that evaluates the authority or background of the author, comments on the intended audience, compares or contrasts this work with another you have cited, and/or explains how this work relates to your topic. You will need to find five sources of important information for the topic of your choice and record these sources using APA format. Each citation is to be followed by a brief (about 150 words or less) descriptive and evaluative paragraph, the annotation. Annotations are ***descriptive and critical***; they expose the author's point of view, clarity and appropriateness of expression, and authority. In addition to the research guide, students will submit a problem statement describing the topic and an explanatory paragraph explaining the topic.

Formal Presentation
In addition to the writing assignments, all students will be assigned a partner to present an 8- to 10-minute informative PowerPoint presentation. Topics will be drawn at random. A printed version of the slides must be presented to the instructor at the time of the presentation.

Electronic Portfolio
At the end of the course, each student will submit an electronic portfolio including course assignments on a disk or CD. You are to improve the assignments, using the suggestions made by your instructors and peers, to complete a high-quality portfolio with materials you can use in applying for a job or internship. The following will be included: cover letter, résumé, strategic communications plan, research guide and PowerPoint presentation. You may include any additional information that may be relevant in your field of study.

Grades

Your final grade will be determined by evaluation of the following assignments/exams and based on the grading scale below:

Assignment	Points Possible	Points Received
Attendance	65	
Descriptive Writing Assignment.	25	
Grammar & Copyediting Exercise	25	
Cover Letter	25	
Work Style/Philosophy Statement	25	
Punctuation Exercise	25	
Résumé	25	
Proposal	25	
Research Guide	100	
Mock Interview	25	
Strategic Communications Plan	100	
Formal Presentation	25	
Electronic Portfolio	25	
Final Examination	100	
Total Points	**615**	

A = 90% and up; B = 80% — 89%; C = 70% — 79%; D = 60% — 69%; F = below 60%

Your completed assignments must be submitted by the appropriate deadline or your grade on the assignment <u>will be dropped 10 percent.</u> Assignments more than two days late will not be accepted. Specific requirements and grading criteria will be given with each assignment. Unless otherwise stated, all papers and assignments are due at the beginning of class on the deadline date.

Course Outline

<u>Monday, June 6</u>

    Introduction to course content

    Introduction to fellow students

    Free writing

    Sign up for free writing

    Basic skills pretest

    Descriptive writing

    Assign descriptive writing

<u>Tuesday, June 7</u>

    Free writing

    Identification of current agricultural issues and their link to communications

    Break into groups

    Solving communications problems

    General semantics

<u>Wednesday, June 8</u>

    Free writing

    Strategic communications plan

    Assign strategic communications plan

    Media strengths and weaknesses

    DUE: Top three strategic communications plan topics & group contracts (complete in class)

    Writing format

    Grammar and punctuation exercise (25 pts)

<u>Thursday, June 9</u>

    DUE: Descriptive writing assignment (25 pts)

    Free writing

    Impromptu speaking

    Copyediting marks

    Business letters and e-mail

    Assign cover letter

<u>Monday, June 13</u>

    DUE: First draft of cover letter

    Free writing

    Cover letter peer critique

    Work style/discipline philosophy statement

    Assign work style/discipline philosophy statement

    Punctuation exercise (25 pts)

<u>Tuesday, June 14</u>

    Introduction to library

    Free writing

Citations
Assign research guide

<u>Wednesday, June 15</u>
No class

<u>Thursday, June 16</u>
No class

<u>Monday, June 20</u>
DUE: Cover letter (25 pts)
DUE: Work style/philosophy statement (25 pts)
Free writing
Résumés
Assign résumé
Proposal writing
Assign proposal

<u>Tuesday, June 21</u>
DUE: One citation draft
DUE: First draft of résumé
Résumé peer critique
Professional dress
Interviewing
Explain mock interviews

<u>Wednesday, June 22</u>
DUE: Strategic communications plan (100 pts)
Free writing
Crisis communications

<u>Thursday, June 23</u>
DUE: Final résumé (25 pts)
DUE: Proposal (25 pts)
Free writing
PowerPoint presentations
Break into presentation pairs
Draw for presentation order
DUE: Top three presentation topics (complete in class)

<u>Monday, June 27</u>
DUE: Research guide (50 pts)
Free writing
Article activity
Electronic portfolios
Mock interviews (25 pts)

Tuesday, June 28
        Formal presentations (25 pts)

Wednesday, June 29
        Electronic portfolios
        Meet in 266 Ag Hall
        Final review

Thursday, June 30
        DUE: Electronic portfolios (25 pts)
        Final exam (100 pts)

APPENDIX F

Treatment Group Syllabus

Summer 2005
MTWR 8:40 – 11:10 a.m.
201 Ag Hall

Instructor
Danna Kelemen
Department of Agricultural Education, Communications and 4-H Youth Development
437 Agricultural Hall
(405) 744-8135
danna.kelemen@okstate.edu
Office hours: MTWR 1:00 – 3:00 p.m.

Blackboard site
Blackboard.okstate.edu

Prerequisite
Junior standing or instructor's consent

Course Objectives
> To develop effective communication skills for agricultural issues through written communication methods.
> To develop effective communication skills for agricultural issues through oral communication methods.
> To improve the quality of technical writing skills.
> To enhance the fundamentals of grammar and punctuation.

Required Text
Hacker, Diana. (2003). *A Pocket Style Manual.* Fourth Edition. Boston: Bedford/St. Martin's.

Drop Policy
Refer to the OSU Catalog for an explanation of the University's drop policy.
Important dates for the Summer 2005 semester are as follows:
Last day to drop with no grade and no fees charged . . . . June 7
Last day to drop with an automatic grade of "W" . . . . .June 24
Last day to withdraw from ALL courses with an assigned grade of "W" or "F" . . . . June 28

Professionalism Statement & Attendance
Professionals in the agriculture, science and natural resource industry are guided by specific values and characteristics. Professional characteristics on which you will be judged in this course include punctuality, attendance, collegial attitude and participation. This course relies extensively on written assignments, discussion and other class interactions; therefore, attendance is crucial to your success. Students will participate in group work, public speaking, written assignments and in-class discussions about topics covered in lecture.

Each attendance day is worth 5 points and is noted in the schedule. During lecture it is taken in the form of free writing assignments. They will be written at the beginning of class; thus, you must attend and complete the assignments in class to receive the points. If you are ill or an emergency occurs, contact (if possible) the instructor (via e-mail or voice mail) prior to the scheduled class time. Otherwise, your attendance and participation are <u>firm</u> expectations.

If you are absent, it is your responsibility to complete previous material. Missed exams and assignments can be made up if the instructor excuses the absence <u>prior</u> to the missed date. If you will be absent for an official University activity, you may be asked to take the exam or do the assignment prior to your absence.

Academic Honesty Statement
Academic honesty is fundamental to the activities and principles of any university. All members of the academic community must be confident that each person's work has been responsibly and honorably acquired, developed and presented. Any attempt to gain advantage not given to all students is dishonest whether or not the attempt is successful. The academic community regards academic dishonesty as an extremely serious matter, with serious consequences that range from probation to expulsion. When in doubt about plagiarism, paraphrasing, quoting or collaboration, consult the course instructor.

Special Accommodations
According to the Americans with Disabilities Act, each student with a disability is responsible for notifying the University of his/her disability and to request accommodations. If any member of a class thinks that he/she has a qualified disability and needs special accommodations, he/she should notify the instructor and request verification of eligibility for accommodations from the Office of Student Disability Services, 315 Student Union. Please advise the instructor of such disability as soon as possible, and contact Student Disability Services to ensure timely implementation of appropriate accommodations. Faculty members have an obligation to respond when they receive official notice of a disability but are under no obligation to provide retroactive accommodations.

Strategic Communications Plan
Each student will be assigned to a marketing group. All groups will create a strategic communications plan (12-page minimum) utilizing various media to meet their given objectives surrounding a specific agricultural issue. The plan will propose to deliver a message to a specific audience or audiences for a specifically defined purpose (to inform, to persuade or to change some aspect of the audience's beliefs, behaviors, etc.).

Research Guide
Each student will write a research guide, sometimes called an "annotated bibliography." The research guide is a list of citations to books, articles, and documents that evaluates the authority or background of the author, comments on the intended audience, compares or contrasts this work with another you have cited, and/or explains how this work relates to your topic. You will need to find five sources of important information for the topic of your choice and record these sources using APA format. Each citation is to be followed by a brief (about 150 words or less) descriptive and evaluative paragraph, the annotation. Annotations are ***descriptive and critical***; they expose the author's point of view, clarity and appropriateness of expression, and authority. In addition to the research guide, students will submit a problem statement describing the topic and an explanatory paragraph explaining the topic.

Formal Presentation
In addition to the writing assignments, all students will be assigned a partner to present an 8- to 10-minute informative PowerPoint presentation. Topics will be drawn at random. A printed version of the slides must be presented to the instructor at the time of the presentation.

Electronic Portfolio
At the end of the course, each student will submit an electronic portfolio including course assignments on a disk or CD. You are to improve the assignments, using the suggestions made by your instructors and peers, to complete a high-quality portfolio with materials you can use in applying for a job or internship. The following will be included: cover letter, résumé, strategic communications plan, research guide and PowerPoint presentation. You may include any additional information that may be relevant in your field of study.

Grades

Your final grade will be determined by evaluation of the following assignments/exams and based on the grading scale below:

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Descriptive Writing Assignment	50	
Grammar & Copyediting Exercise	25	
Cover Letter	25	
Work Style/Philosophy Statement	50	
Punctuation Exercise	25	
Résumé	25	
Research Guide	100	
Mock Interview	25	
Strategic Communications Plan	100	
Formal Presentation	25	
Electronic Portfolio	25	
Final Examination	100	
Total Points	**640**	

A = 90% and up; B = 80% — 89%; C = 70% — 79%; D = 60% — 69%; F = below 60%

Your completed assignments must be submitted by the appropriate deadline or your grade on the assignment <u>will be dropped 10 percent.</u> Assignments more than two days late will not be accepted. Specific requirements and grading criteria will be given with each assignment. Unless otherwise stated, all papers and assignments are due at the beginning of class on the deadline date.

Course Outline

<u>Monday, June 6</u>
        Writing pre-test
        Introduction to course content
        Introduction to fellow students
        Free writing
        Sign up for free writing
        Descriptive writing
        Basic skills pretest

<u>Tuesday, June 7</u>
        Free writing
        Assign descriptive writing assignment
        Identification of current agricultural issues and their link to communications
        Break into groups
        Solving communications problems
        General semantics

<u>Wednesday, June 8</u>
        DUE: 1st draft of descriptive writing
        Descriptive writing
        Free writing
        Strategic communications plan
        Assign strategic communications plan
        Media strengths and weaknesses
        DUE: Top three strategic communications plan topics & group contracts (complete in class)
        Writing format
        Grammar and punctuation exercise (25 pts)

<u>Thursday, June 9</u>
        Free writing
        Descriptive writing
        Impromptu speaking
        Copyediting marks
        Business letters and e-mail
        Assign cover letter

<u>Monday, June 13</u>
        DUE: First draft of cover letter
        DUE: 2nd draft of descriptive writing
        Free writing
        Cover letter peer critique
        Punctuation exercise (25 pts)

<u>Tuesday, June 14</u>

        DUE: 3rd draft of descriptive writing

        Introduction to library

        Free writing

        Citations

        Assign research guide

<u>Wednesday, June 15</u>

        Creative study time to complete assignments

<u>Thursday, June 16</u>

        Creative study time to complete assignments

<u>Monday, June 20</u>

        DUE: Cover letter (25 pts)

        DUE: Descriptive writing assignment (50pts)

        Free writing

        Résumés

        Assign résumé

        Work style/personal philosophy statement

<u>Tuesday, June 21</u>

        DUE: One citation draft

        DUE: First draft of résumé

        Assign work style/philosophy statement

        Résumé peer critique

        Professional dress

        Interviewing

        Explain mock interviews

<u>Wednesday, June 22</u>

        DUE: Strategic communications plan (100 pts)

        DUE: 1st draft of work style/philosophy statement

        Work style/philosophy statement

        Free writing

        Crisis communications

<u>Thursday, June 23</u>

        DUE: Final résumé (25 pts)

        Free writing

        PowerPoint presentations

        Break into presentation pairs

        Draw for presentation order

        DUE: Top three presentation topics (complete in class)

<u>Monday, June 27</u>

        DUE: Research guide (50 pts)

DUE: 2nd draft of work style/philosophy statement
Free writing
Work style/philosophy statement
Article activity
Electronic portfolios
Mock interviews (25 pts)

<u>Tuesday, June 28</u>
Formal presentations (25 pts)
DUE: 3rd draft of work style/philosophy statement

<u>Wednesday, June 29</u>
DUE: Electronic portfolios (25 pts)
Electronic portfolios
Meet in 266 Ag Hall
Final review
Writing post-test

<u>Thursday, June 30</u>
DUE: Work style/philosophy statement (50 pts)
Final exam (100 pts)

APPENDIX G

Panel of Experts

Dwayne Cartmell
Assistant Professor
Agricultural Education, Communications & 4-H Youth Development
Oklahoma State University

Cindy Blackwell
Assistant Professor
Agricultural Education, Communications & 4-H Youth Development
Oklahoma State University

Julie Focht
Teaching Associate
Agricultural Education, Communications & 4-H Youth Development
Oklahoma State University

APPENDIX H

New SAT® Essay Scoring Guide

New SAT Essay Scoring Guide

SCORE OF 6

An essay in this category is *outstanding*, demonstrating *clear and consistent mastery*, although it may have a few minor errors. A typical essay

- effectively and insightfully develops a point of view on the issue and demonstrates outstanding critical thinking, using clearly appropriate examples, reasons, and other evidence to support its position
- is well organized and clearly focused, demonstrating clear coherence and smooth progression of ideas
- exhibits skillful use of language, using a varied, accurate, and apt vocabulary
- demonstrates meaningful variety in sentence structure
- is free of most errors in grammar, usage, and mechanics

SCORE OF 5

An essay in this category is *effective*, demonstrating *reasonably consistent mastery*, although it will have occasional errors or lapses in quality. A typical essay

- effectively develops a point of view on the issue and demonstrates strong critical thinking, generally using appropriate examples, reasons, and other evidence to support its position
- is well organized and focused, demonstrating coherence and progression of ideas
- exhibits facility in the use of language, using appropriate vocabulary
- demonstrates variety in sentence structure
- is generally free of most errors in grammar, usage, and mechanics

SCORE OF 4

An essay in this category is *competent*, demonstrating *adequate mastery*, although it will have lapses in quality. A typical essay

- develops a point of view on the issue and demonstrates competent critical thinking, using adequate examples, reasons, and other evidence to support its position
- is generally organized and focused, demonstrating some coherence and progression of ideas
- exhibits adequate but inconsistent facility in the use of language, using generally appropriate vocabulary
- demonstrates some variety in sentence structure
- has some errors in grammar, usage, and mechanics

SCORE OF 3

An essay in this category is *inadequate*, but demonstrates *developing mastery*, and is marked by ONE OR MORE of the following weaknesses:

- develops a point of view on the issue, demonstrating some critical thinking, but may do so inconsistently or use inadequate examples, reasons, or other evidence to support its position
- is limited in its organization or focus, or may demonstrate some lapses in coherence or progression of ideas
- displays developing facility in the use of language, but sometimes uses weak vocabulary or inappropriate word choice
- lacks variety or demonstrates problems in sentence structure
- contains an accumulation of errors in grammar, usage, and mechanics

SCORE OF 2

An essay in this category is *seriously limited*, demonstrating *little mastery*, and is flawed by ONE OR MORE of the following weaknesses:

- develops a point of view on the issue that is vague or seriously limited, demonstrating weak critical thinking, providing inappropriate or insufficient examples, reasons, or other evidence to support its position
- is poorly organized and/or focused, or demonstrates serious problems with coherence or progression of ideas
- displays very little facility in the use of language, using very limited vocabulary or incorrect word choice
- demonstrates frequent problems in sentence structure
- contains errors in grammar, usage, and mechanics so serious that meaning is somewhat obscured

SCORE OF 1

An essay in this category is *fundamentally lacking*, demonstrating *very little* or *no mastery*, and is severely flawed by ONE OR MORE of the following weaknesses:

- develops no viable point of view on the issue, or provides little or no evidence to support its position
- is disorganized or unfocused, resulting in a disjointed or incoherent essay
- displays fundamental errors in vocabulary
- demonstrates severe flaws in sentence structure
- contains pervasive errors in grammar, usage, or mechanics that persistently interfere with meaning

Essays not written on the essay assignment will receive a score of zero.

4

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APPENDIX I

Writing Assessment Rubric

AGCM 3103
Writing Assessment Rubric

Introduction (6 pts) Introduces topic, describes its importance, explains writer's knowledge of topic, etc.	
Organization (9 pts) Follows a logical order, utilizes transitions, etc.	
Grammar/Punctuation/Spelling (30 pts) Proper subject/verb agreement, proper noun/pronoun agreement, proper parallel structure, proper sentence structure, correct use of punctuation marks, etc.	
Content (24 pts) Doesn't leave any unanswered questions, and clearly develops point of view.	
Structure (6 pts) 12pt, Times New Roman, double spaced, two-three pages, etc.	
Total Points	

APPENDIX J

Anonymous Feedback Form

AGCM 3103
Student Feedback Form
Fall 2005

How do you feel about writing?

How do you feel about your writing ability? Do you feel it is a personal strength or weakness?

What types of writing do you prefer? Essays, creative writing, business writing, etc.

Do you feel writing skills are vital to your success upon graduation?

What activities or instruction do you feel would help to improve your writing skills?

Do you feel writing an essay is a product or a process. Explain.

Do you feel the method in which writing is taught influences how you learn?

What about writing do you enjoy or not enjoy?

APPENDIX K

Interview Schedule

AGCM 3103 Student Interview Schedule

1.   How many English credit courses have you taken up to this point in your college career?

2.   How would you describe your attitude toward writing?

3.   What skills do you feel are necessary to master to be considered a good writer?

4.   How important do you feel proficient writing skills are for college graduates?
   ___Very important   ___Important ___Somewhat important
   ___Not important   ___Not at all important

5.   What are your feelings about taking this course?

6.   Do you feel this course is beneficial to you and your future success as a professional?

7.   Do you feel the method in which writing is taught influences how much a student learns?

8.   If you could describe the ideal writing course at the college level, what would it consist of?

9.   How could your instructor in a writing course better assist you in improving your writing skills?

10.   Do you feel the course helped you to improve your writing skills?   Y or N

11.   Did you attend a four-year institution for your entire college career?   Y or N

12.   Did you ever take courses at a distance during your college career?   Y or N

VITA

Danna Ryan Kelemen

Candidate for the Degree of

Doctor of Philosophy

Thesis: EFFECTS OF A PROCESS WRITING CURRICULUM ON STUDENTS IN
          AN AGRICULTURAL COMMUNICATIONS COURSE: AN
          EXPERIMENTAL STUDY

Major Field: Agricultural Education

Biographical:

   Personal Data: Danna Ryan Kelemen was born September 13, 1972, in El Paso,
       Texas. She is the daughter of John and Sharon Ryan.

   Education: Bachelor of Science in Agricultural Communications, Texas Tech
       University, 1994; Master of Science in Agricultural Education, Texas
       Tech University, 1995; and Doctor of Philosophy in Agricultural
       Education, Oklahoma State University, 2006.

   Experience: Graduate Teaching Assistant in the Department of Agricultural
       Education and Communications at Texas Tech University, August 1994 to
       June 1995; Information Specialist for the Texas State Soil and Water
       Conservation Board, June 1995 to December 1997; Communications
       Director for the Vocational Agriculture Teachers Association of Texas,
       December 1997 to September 2002; Independent Communications
       Consultant, September 2002 to February 2003; Grant Writer, May 2002 to
       December 2003; and Teaching Associate in the Department of
       Agricultural Education, Communications & 4-H Youth Development at
       Oklahoma State University, August 2003 to May 2006.

   Professional Memberships: American Association for Agricultural Education, Member;
       Association for Communication Excellence, Member; and
       North American Colleges and Teachers of Agriculture, Member

Name: Danna Ryan Kelemen   Date of Degree: May, 2006

Institution: Oklahoma State University   Location: Stillwater, Oklahoma

Title of Study: EFFECTS OF A PROCESS WRITING CURRICULUM ON STUDENTS
                IN AN AGRICULTURAL COMMUNICATIONS COURSE: AN
                EXPERIMENTAL STUDY

Pages in Study: 162   Candidate for the Degree of Doctor of Philosophy

Major Field: Agricultural Education

Scope and Method of Study: This study sought to examine if the use of a process writing model curriculum improved the writing performance of students in an agricultural-context communication course. The scope of this study was confined to students enrolled in a course section of AGCM 3103 during the 2005 fall semester at Oklahoma State University. The method of research was an experimental study using a post-test only control group design.

Findings and Conclusions: The findings of this study indicated the majority of students enrolled in the AGCM 3103 course were male, 21 years of age, and exhibited no difference in their writing ability. The process writing model curriculum was shown to have a statistically significant effect on the students' overall grade in the course, as well as on the two post-test writing assignment measures. There was little difference in the perceptions of students in the treatment and control groups, either before or after the introduction of the process writing curriculum. Students' perceptions of writing were varied, but generally believed the course had improved their writing skills. Students' perceived methodology and instructor style were important. Additionally, students generally believed writing was a process and a life skill necessary for a professional career. Conclusions drawn from this study indicated a process writing model curriculum did result in a significant increase in student writing performance. Students' perceptions on writing were varied based on a number of variables, while students' attitudes were moderate to positive about the course and the benefits afforded them. Students indicated methodology and instructor style had a direct effect on how much they learned in the course, and students stated they preferred a writing course that would help prepare them for the future. Students' opinions were mixed on the type of skills needed to be a good writer, but did agree proficient writing skills, at a minimum, were important for college graduates and a needed ability in life.

ADVISER'S APPROVAL: James Leising