

**TECHNICAL WRITING:
ASSESSING CURRICULUM AND IMPROVEMENT RATES FOR ADULT
LEARNERS**

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A Thesis
Submitted to the Faculty of Education
of the University of Lethbridge
in Partial Fulfilment of the
Requirements for the Degree

MASTER OF EDUCATION

LETHBRIDGE, ALBERTA

April 2000

DEDICATION

“The teacher is no longer merely the-one-who-teaches,
but one who is himself taught in dialogue with the students, who
in turn while being taught also teach. They become jointly
responsible for a process in which all grow.”

Paulo Freire in *Pedagogy of the oppressed*

ABSTRACT

The purpose of this study was to determine if adult students at the College of the Rockies improved in their ability to write technical English after having studied specifically developed curriculum. The research was conducted during the winter semester (January to April 1999) at the Cranbrook, BC campus.

Curriculum for the course *Technical and Professional Writing 091* was developed as a project for the Centre for Curriculum, Transfer and Technology, an arm of the post-secondary education division of the government of the Province of British Columbia. Four of the units, Direct Requests, Bad News Messages, Persuasive Writing, and Reports and Proposals were tested out in the Cranbrook class via pre and posttesting of the students. As well, field observations and interviews formed an integral component of the study.

The final data analysis showed overall improvement in the learners' ability to write technical English; in addition, each curriculum unit was scrutinized for improvement rates. Recommendations were made for further areas of study and research needed in this discipline.

ACKNOWLEDGEMENTS

In the workings of any project, especially those that are of the scope and magnitude of a graduate thesis, there are always many who contribute to its successful completion. Only the idea for the project was mine; the final product resulted from the efforts of many, and it is with gratitude and humility that I thank them.

My first thanks must go to the students of the TPW 091 class at the College of the Rockies, Cranbrook Campus. Their dedication and hard work made my research progress smoothly; I learned much from them. Their instructor, Jan Harkess, generously opened her classroom to me and spent hours conferring with me, ensuring my study was moving forward. I owe her much.

To Dr. Leah Fowler I am indebted. As a supervisor, she not only offered critical review of my work, she offered me moral support and understanding. She respected my work from its incipient stages and encouraged me all along the way. I appreciate her careful attention to me and her availability throughout the project.

I recognize the contribution of the College of the Rockies in allowing me the freedom to conduct the study, in providing me with release time, and in seeing the value of it. Many thanks go to Ron McRae, Head of the Access Education and Student Services Department, for his support and understanding, and to Bill Betcher and Doug McLachlan, Deans, who approved my project. The Fernie Campus faculty and staff were invaluable to me: to Rick Emmerson who covered classes for me: to Patti Emmerson who offered technical and moral support: to Mary Shier, Colleen Caldwell and Connie Westbury who made my job easier with their expertise.

There are times when friends go well beyond the call of duty. Chris Kielpinski not only crunched my numbers and introduced me to statistical analysis, he spent hours in academic debate with me. I could not have finished this project without his expertise and support and the technical support of his wife, Rhonda Kielpinski. I must thank Eric Hoogstraten who started me on this journey initially. To Ken Georgetti, President of the Canadian Labour Congress, I owe my gratitude for his moral support, encouragement and overwhelming generosity.

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Research Question and Background

Topic

I designed this thesis based on four units of new curriculum which I have developed with the financial support of the Centre for Curriculum Transfer and Technology (CCTT), an arm of the British Columbia provincial government's Ministry of Advanced Education, Training and Technology (MAETT) dedicated to funding provincially initiated curriculum. The complete course will be entitled *Technical and Professional Writing 091* (TPW 091); it will be used as an entry prerequisite to technical and career programs at the College of the Rockies and all other public colleges in BC. The four units I developed are Direct Requests; Bad News Messages; Persuasive Writing; and Reports and Proposals.

Goal

I intended to discover whether, having completed the four above-mentioned units of TPW 091, students improved their ability to write in a more clear, concise and technically acceptable fashion. Through researching students' performance on a variety of written assignments over the period of a semester, I assessed their improvement in the areas of writing direct requests, bad news messages, persuasive messages, and reports and proposals.

Research Question

Did students of TPW 091 improve their performance in writing technically sound messages as a result of having studied and completed the four above-mentioned units of TPW 091?

Definition of Terms

The definition of technically sound messages refers specifically to demonstrating an improvement in the following:

- understanding the writing process
- using the “formula” approach to composing messages
- composing direct, persuasive and bad news messages that include elements taught in instructional lessons
- composing a report or proposal which has a clear message, is focused and follows guidelines suggested in instructional lessons

Unit of Analysis

Individual students of TPW 091 at the Cranbrook, BC Campus of the College of the Rockies were the unit of analysis.

Variables

The intervening variables consisted of the students’ attendance in class; previous education and training; age; and their perceived notion of their own writing skills previous to studying class materials.

Background

I am an English and communications instructor at the Fernie Campus of the College of the Rockies where I have taught adults for nineteen years. My main area of

instruction is in adult upgrading at the provincial (grade 12) level. My secondary functional area is in instructing business communications and technical composition at the first year college level. Besides instructional duties I serve as an educational advisor helping prospective students develop educational plans.

Because of my background in teaching English and my many years of activity in provincial curriculum projects, I was asked by the Centre for Curriculum Transfer and Technology to chair a committee of four colleagues tasked with developing a new provincial level course to be used and fully articulated in the BC public post-secondary system. My colleagues were: Ted Hougham from Vancouver Community College; Wendy Watson from the University College of the Fraser Valley; Cathy McLean from Capilano College; and John Harris from the Open Learning Agency. Each member of this committee was charged with developing units that comprise TPW 091. I oversaw the development of the units my colleagues wrote, and, as well, I developed the four units assigned to me: Direct Requests, Bad News Messages, Persuasive Writing, and Report and Proposal Writing. CCTT published TPW 091 in the spring of 1999. The course will be piloted in its entirety in the fall of 1999 by one of the colleges represented above. The testing of my materials as outlined above will form part of the initial piloting and the results written up in this thesis will be shared with the committee and CCTT.

Over the past nine years, I have been actively involved in the post-secondary articulation process in BC. Because of my expertise in this area, I have a keen interest in developing new materials and improved versions of older materials. Since all courses developed with provincial funding must be fully articulated in order to fit on the

provincial transfer and equivalency grid, I will be discussing the articulation process in the province of BC in Chapter 3 Methodology.

As is quite evident to anyone by now, I am very active in provincial activities: curriculum development; articulation; joint ministry projects; lobbying, and most recently provincial bargaining for the faculty union. It is through my experience with seven months of union bargaining and writing precise contract language that I became even more interested in this writing course project. Couching an issue in a clear, direct way is not only essential in bargaining but also extremely difficult when vested interests and emotional issues usurp the discussions. It was this experience that piqued my interest in developing a course that covered these complexities for real world writing. Clear, accurate communications, I believe, can be learned only by writing often and in copious amounts. All of these experiences have led me to the point where I see not only the need for effective instructional materials, but also the importance of these materials being widely available to students in all fields of study.

Rationale

Given that many of our graduated students proceed to higher level college courses or secure employment in fields where they are required to write clearly (virtually any job), I evaluated the effectiveness of the four identified units of TPW 091 in preparing students to communicate in clear written form by studying individual student's improvement over the period of a semester.

There is a wide body of research suggesting that assessing students' written performance is a valuable undertaking. Not only is an instructor able to help a student's progress, but also the instructor can facilitate the learning process and the learning

outcomes by being aware of student performance throughout the academic session.

Putting the four identified units of TPW 091 under the research microscope not only helps me in future curriculum development projects, but aids my colleagues in defining teaching methodologies that produce successful outcomes.

Literature Review

The current literature suggested there are three areas of importance when creating adult curriculum and analyzing its effectiveness: the unique needs of adult learners; the measuring of skills achieved after having studied writing (outcomes assessment); and effective writing programs. This chapter is comprised of a review of these three topics.

Adult Learner Needs

At one time, what people learned in their youth remained valid and useful for the rest of their lives. This is no longer so. Cultural and technological change is now greater than one's own life span, and the need to be a lifelong learner is more apparent than ever (Knowles, 1980).

Knowles (1978) also suggests that adult learners have different needs and motivating forces in their lives than do children. His adult learning theory claims that: 1) adults are motivated to learn when they experience needs and interests; 2) adults' orientation to learning is life-centered and practical; 3) adults draw upon their experiences as resources for learning; 4) adults have a great need to be self-directing.

The four units I developed for the TPW 091 course incorporate these four principles. It is assumed that when adults return to the education system a need has developed in their personal or professional lives that encourages them to seek out a learning environment. They usually enroll in an English writing course for one of two reasons: either they need a specific credit as a prerequisite for further study, or they want to upgrade specific skills for their workplaces or for personal satisfaction.

Because adult learners are practical by nature, there is a need to deliver a course or program that not only meets their immediate needs, but also satisfies long term

objectives. If someone wants to learn to write better, it is important that (s)he understands the process of writing and the elements of practice required. Assigning tasks of writing for “real life” encourages the student to incorporate the process in all writing and not solely in the perceived isolated environment of the classroom. Immediacy of application of new knowledge is imperative if the learner is to be successful.

Because adults define themselves by their experience, they have a great investment in its value. Adults identify themselves by describing their occupations, where they have worked and traveled, what their achievements have been, and what their training and education have helped them do (Knowles, 1980). When their experience is not recognized and valued, the learners themselves feel devalued. It is important, then, to build in flexibility of assignments, both with topics (give more choices), and with the practicality (make them more meaningful for individual situations and draw upon life experiences). Students will develop a vested interest in course work that relates to and makes use of their own experiences, and this interest translates into greater success in the classroom.

The Need to Write Well

I consulted widely among my colleagues at other public post-secondary institutions in British Columbia, and I chose several texts that were used to develop the four units of curriculum. The texts follow in the bibliography.

Do students improve their performance on writing assignments after having completed a course on writing instruction? If so, can this growth be measured? According to Brand (1992b) and Ruth and Murphy (1988), the answers are both affirmative.

There is little doubt that students graduating from any college program need to be prepared to write well for their future employment. Communications is an integral part of any career, but one must not forget that, as well, these students are citizens and consumers and equally need the foundations that a good communications course lays (Gottlieb, 1992). Because the College of the Rockies is sending these graduates out into the work world, it wants to be sure that they are gaining useful and transferable writing skills. This is not simply a concern locally: one American college, Cortland, requires its graduates of the English Department to submit to fairly rigorous exit testing which includes a comprehensive portfolio creation. These portfolios and exams are then assessed and revised until they meet certain standards; at that point, the students' writing status is stamped on their transcripts in the form of "competent, marginal, or unsatisfactory" (Brand, 1992a).

Graves (1992) encourages using portfolios to aid in writing development for students of all ages. He claims that portfolios link the theory of the classroom lessons to the practice required of the students. As well, he finds that students who engage in portfolio writing learn to evaluate their own work in such a way as to enhance their learning. Portfolios, then, become a tool to help the student achieve success and proficiency in writing.

Outcomes Assessment

Outcomes Assessment involves measuring an individual's writing ability after writing has been studied formally. The principal goals of an Outcomes Assessment and of this study are to answer the question whether the course actually helped the student write better and whether that improvement can be measured. The attempt to measure the gains

a student makes from a particular course may be called value-added assessment (White, 1990). Improved scores between pre and posttests are expected to show the value a course has had for the student. If a writing course has brought about gains, then those gains should be observable and measurable (White, 1990).

An increasingly popular option for judging a student's writing performance that takes into account the writing process is the portfolio. In portfolio assessment, several representative pieces written over a given course of study are evaluated. Usually, the portfolio brings together writing assignments collected at intervals over the semester (Brand, 1992b). Hyslop (1990) believes that to accurately measure the quality of students' writing, the focus should be on before and after samplings of complete pieces of writing. The students of TPW 091 were given this opportunity since I pre and posttested them.

Hughes and Martin conducted a study in 1992 in Minnesota investigating whether students who are given experience in writing would improve the quality of their writing over the course of an academic year. A fifty-minute essay exam designed to assess writing skills was administered at the beginning of the fall term and again at the end of the spring term to 113 students in composition classes at three colleges in the Minnesota Community College system. Results showed that students given experience in writing improved the quality of their writing over the course of the academic year, and that the gains increased according to the amount of instructional writing experience (Hughes and Martin 1992).

Another study examined the writing of first, second and third year college students to determine whether the development of writing skills changes over the college

years. Writing samples were obtained at scheduled intervals resulting in 4 independent sets of 32 essays for comparison. A total of 128 essays was analyzed using 107 measures in the following categories: overall quality, ideas, support, organization, diction, syntax, and mechanics. The most significant finding was that writing did seem to change, in varied and substantial ways, toward what may be characterized as competent, more mature writing (Haswell, 1984).

Haswell (1981) conducted another similar experiment where first year college students were instructed in writing sentence combining paragraphs for 12 consecutive weeks and then tested by rewriting exercises. This treatment resulted in significant gains in their writing performance.

Davis (in press) used a quasi-experimental design to determine whether a traditional rule-based, form-centred mode of instruction in basic writing and grammar combined with a writing process approach had any significant impact on overall writing quality and grammar skills. The experiment used a quantitative, pretest/posttest design with 14 developmental English students. Results indicated a significant growth in overall writing quality and slightly less growth in grammar and writing mechanics.

It is interesting to note that a study undertaken in Japan (Shiozawa and Simmon, 1995) showed somewhat different results. The study investigated the degree to which students' use of English as a Second Language in journal writing outside of class corresponded to their performance on language tests. Specifically, the correct use of articles in the position and function of "a, an, and the" was examined. The experimental group, 132 students in 6 second-semester classes, was instructed in the use of articles; the control group of 222 students in 6 first-semester classes was not. Student journal extracts

were randomly sampled to measure use of articles, and results were compared with quiz scores. It was found that neither group showed a significant improvement in the use of articles in journal writing; however, the scores on quizzes in the experimental group consistently increased as they were given instruction on article use. Results suggest that while students were gaining knowledge from instruction, they were not applying it in practice. I find this significant as it apparently is important to distinguish between those students whose first language is English and those whose first language is other than English when designing a communications course. TPW 091 was developed with fluent English speakers in mind and would probably not translate well as an effective writing course for ESL students.

Effective Writing Programs

Any writing program is more likely to be successful if students are given ample opportunity to write (Holbrook, 1984). As simple as that may sound, when students are not required to produce several writing assignments over the course of a semester, their scored results on post assessment tests are considerably lower. Neill (1982) lists a core of elements that he considers important to successful writing instruction:

- the writing process
- syntax
- sequence
- writing for real audiences
- writing assessments

As well, to be effective, a writing program needs to provide the opportunity for students to write frequently, to write across the curriculum, and to write with an emphasis

on revision (Goldberg, 1983; Grave, 1978; Howard, 1984). Whole writing tasks rather than drills significantly improve a student's ability to write (Coiby, 1986), and these tasks are more meaningful if the student's personal needs and interests are taken into consideration and used as the starting point of assignments (Brand, 1981).

In a research report published by researchers at the Office of Educational Research and Improvement (1993), the curriculum of an effective writing program is summed up as providing students with:

- frequent writing assignments
- a wide variety of writing
- examples of good writing
- constructive and honest feedback on their writing
- a model of the writing process

According to Woolever (1997), technical communication specialists need to be up to date in the classroom to meet the changing needs of the workplace. Along with this, it is desirable for the instructor to integrate theory with practice by helping students realize that composing standard technical text requires the writer pay careful attention to the interplay between the audience, the environment and the document. Woolever insists that teaching how to write in a technical fashion is only part of the job, and that deciding when and why to write is equally as critical. This poses an interesting dilemma for some traditional style instructors who would believe that the "how to" is paramount to any other curricular emphasis on the rhetorical nature of technical writing.

Morgan (1997) discusses helping students see connections between writing and their technical work that they are studying in their chosen disciplines. This interaction is

necessary for the students to integrate writing into all that they do academically in order to make technical writing less isolated and more meaningful.

It is interesting to note that when I developed the curriculum for TPW 091, I incorporated casebook scenarios for writing assignments since I believed that the affective dimension of technical writing was important to address. This theory is supported by Wilner (1994), who claims that transforming a set of data (assignment instructions) into a useful document is much more the essence of technical writing than listing forms and formats for students to follow in rote manner. When students feel that an assignment has relevance in their lives, they are more apt to be connected to their writing and feel it has credibility.

Research by Herrmann (1989) indicates that “peer response groups” or peer collaboration is a useful pedagogical tool in helping students learn how to write better. She discovered that when students write without reactions from a writing group, they tended to not anticipate an audience. Having audience awareness tended to help students become more aware of possible strategies for revising their written message. Concrete suggestions from peers were more likely to be heeded by the members of the group. Even though Herrmann’s study was conducted with younger, school-age students, this theory is easily extrapolated to benefit adult learners.

The writing process necessarily demands revision. Rewriting is key in developing strong writing skills. However, Lehr (1995) claims that students often see revision not as an opportunity to develop and improve a piece of writing but as an indication that they have failed to do it right the first time. To them, revision means simply correcting their

work. To many instructors as well, revisions represent cosmetic changes rather than a rethinking of the student's work.

Calkins (1986) stresses that to avoid this negative connotation of revision, students be encouraged to discuss the positive aspects of their writing. She asks the student to find essential words, phrases and sentences in their work and to explain their significance. This focuses the student's attention on how and why the work was written in a particular way and helps the student recognize what works and what needs to be changed. Revision then becomes meaningful change as opposed to simple editing.

Research bears out the fact that, given the proper tools, instruction, and structure, students' writing shows improvement over a period of time, and this improvement can be measured. I intended to put the four units of TPW 091 to the test to determine whether or not students' writing ability improved.

Methodology

Provincial Articulation Framework

Prior to developing the curriculum units to be used in this research, I reviewed the Adult Basic Education Articulation in British Columbia 1988-1999 guidebook. I was instrumental in writing the first guide book in 1983 and have been involved in its evolution since that time; therefore, I am familiar with its intent, content and purpose. Because it is in the student's best interest that the College's courses adhere strictly to the provincial articulation guidelines, I used the outcomes from the articulation guide as the basis for the outcomes for TPW 091. This ensured that the new course fit on the articulation grid and that few, if any, problems would be met during the articulation process when all units have been developed. Having successfully completed TPW 091, a student will satisfy these outcomes, and, therefore, be deemed to be accredited with a provincially standard technical writing course. In developing this course, I have kept these outcomes in the forefront and all assignments are relevant to the development of these skills.

The goals of ABE articulation, as stated in the guide, are as follows:

1. to facilitate transfer of students from one educational institution to another;
2. to facilitate entry of students to other programs;
3. to lend credibility to ABE certificates/diplomas;
4. to provide common terminology throughout BC for levels of achievement;
5. to provide for exchange of information;
6. to set and maintain learning outcomes;
7. to set course requirements for certificates/diplomas;

8. to develop guidelines for the content of courses;
9. to provide a forum for the discussion of ABE issues;
10. to provide a common voice when addressing external bodies;
11. to encourage development and exchange of curriculum materials.

Mastering English is an ongoing process that involves a variety of skills. The development of these skills is a continuum, and often overlap is desirable at different levels. Teaching written communications necessitates that the instructor use an integrated and holistic approach. The guide outlines six basic areas of learning outcomes to incorporate into the curriculum of a Provincial level writing course: 1) critical thinking skills; 2) oral/aural communications; 3) reading, research and reference skills; 4) the writing process; 5) cooperative communications; 6) media literacy.

When developing the lesson plans for the four units of curriculum, these learning outcomes listed above were incorporated in the instructional materials and in the assignment files. An example of an assignment using several of these outcomes is found in the Persuasive Messages unit. The assignment involves role playing a debt collection scene with a peer after having researched methods of collection. The lesson plans for the unit are found in Appendix IV.

Preliminary Collegial Input

When developing any curriculum, it is important to confer with colleagues in order to truly gain a complete picture of what needs the new course or program should fulfill, what perceptions exist about the efficacy of current programming, and what delivery methods would be most appropriate to encourage student success. Over a period of two months, I set about gathering various information from colleagues:

- I met with members of the Access Education (AE) Department [within which ABE is housed]
- I met with English instructors of the AE Department
- I met with my provincial committee twice to determine guidelines for the CCTT project
- I formally interviewed a colleague (see Appendix III) who is an English instructor and a recent graduate of the Master of Arts in Technical and Professional Writing program at Washington State University
- I informally conferred with a colleague who teaches English in a receiving department (University Studies)

From my meetings with the first two groups, I reconfirmed what I had previously known: that the new course must adhere to provincial articulation guidelines in order to facilitate credit transfer. After establishing that, the main concern fell to having a course reflect the writing process (prewrite, draft, revise, edit) and its importance in learning how to write better. My colleagues suggested that TPW 091 contain numerous writing assignments that reflect this process.

The only other suggestion that surfaced from these meetings was the issue of alternate delivery methods. Many of my colleagues, and I concur, believe that offering courses via a distance education or off campus mode would be useful for those students whom we cannot reach with our traditional schedule of classes. It is often the case that adult learners work part time, raise families, and commute from smaller communities in order to gain credits needed. By offering flexible programming, our college can provide access to post-secondary education that otherwise would be either too difficult

logistically, or too expensive for some learners. TPW 091 was constructed so that it can be delivered by lecture, in a self-paced learning centre, or in a distance education mode. I mention this only because it formed a part of my discussions with my local colleagues and those on my provincial committee. The focus of this thesis does not involve exploring alternate delivery methods; as well, the method of testing the curriculum was the standard lecture mode.

The provincial committee charged with developing this new course met twice in the fall of 1998. During those meetings we set parameters for the new course and developed learning outcomes for the units; the learning outcomes for the four units I developed are contained in the lesson plans in Appendix IV. It is important to note that TPW 091 is new to the articulation grid at the provincial level (college entry preparation). It is new in the fact that all other provincial level English courses are literature-based. TPW 091 is the first course that recognizes the need for an alternative path for those students entering technical training and who would be better served by studying ways to improve their communication skills.

The formal interview that I conducted with a colleague who recently graduated from a graduate program in technical and professional writing became a very useful vehicle for dialogue around some current issues in theories of teaching writing. I transcribed verbatim a 10 minute portion of the interview (Appendix III) that I feel became the crux of what we talked about: the self direction that adults appreciate in a learning environment; and the relevancy of writing for the real world. The overriding principle, once again, was having the students write numerous assignments over the course of the semester. She also suggested a curriculum with ample opportunity to

practice revision in writing and to receive reader-based and criteria-based feedback; as with any course, feedback is an integral element, and I took particular care to relay this to the instructor who is piloting TPW 091. I have included the interview blueprint (Appendix I) and the interview conventions (Appendix II).

I also had the opportunity to engage in an informal interview with a colleague; by informal I am referring to a deliberate but casual conversation I had with a faculty member of the University Studies Department at the College of the Rockies. She instructs English and was the department head for the Arts and Sciences Department. Our conversation revolved around two questions:

- What skills do students who are entering higher levels of English need in order to be successful?
- How should students acquire these skills?

When asked the first question, she replied that entering students specifically need critical thinking skills, familiarity with various forms of writing, and the ability to write clear, grammatically correct sentences. Her response to how students best acquire these skills was an emphatic plea to have students write copiously in preparatory courses. I noticed how her responses bore out the research I had been reading regarding the need for writing, revision and timely feedback on assignments.

TPW 091 satisfies the criteria for entrance to a variety of further programming. It also will be an essential part of developmental studies which systematically prepares the student over a period of time and in stages for such entry. The course emphasizes the writing process with numerous and diverse writing assignments required in the

curriculum. These assignments develop and enhance the skills outlined in the provincial articulation guidebook and provide a continuum for further advanced studies.

The Experiment Design

Because of the nature of the research I pursued, the most appropriate method to test my hypothesis was the One Group Pretest-Posttest Design. This design has a pretest, a treatment, and a posttest. The experimental group was made up of TPW 091 students in Jan Harkess' class at the Cranbrook campus of the College of the Rockies where I received permission to have the course piloted.

Initially, I wanted to use a control group design. However, upon careful examination I came to realize that the data gathered from a control group made up of randomly selected students at any campus may very likely produce spurious effects. For the most part, all students with the exception of those studying the trades (welding, mechanics, etc.) are required to enroll in an English composition course as a component of their studies. Even though they would not be enrolled in TPW 091 per se, the effects of studying English composition could change their scores on the posttest, and the results would be, no doubt, quite different than if they had no instruction in composition at all. I recognize that having a control group is desirable, but in this case it creates the possibility of skewed data analysis

Permission to Conduct the Study

Prior to entering the class for experimental purposes, I obtained the written consent of the department head, Ron McRae, from the Access Education and Student Services Department; and from the instructor of TPW 091, Jan Harkess. I as well sought the permission to participate from the students in the class. There were 19 students

registered in the class; 14 attended the class on the day that I explained my project and asked for their permission to conduct my study. I verbally defined the parameters of the study and elucidated their contribution to it. It was made very clear that no one was under any obligation to participate and that there would be no repercussions if anyone chose not to sign the permission letter. All 14 students agreed to take part in the study. As a matter of fact, they all seemed quite excited to be a part of the research and wished me well. A fifteenth student enrolled the following class and was briefed by the instructor. She signed the consent forms and filled in the student information form as well. This brought my number of participants to 15. (See Appendix V for Letters of Permission).

Pretest / Posttest

I pretested the students within the first two weeks of the beginning of the winter semester on January 19, 1999. The test required the students to write four brief messages within the three-hour time frame of their scheduled class:

- a simple, direct request
- a bad news message
- a persuasive message
- an outline for a formal proposal

I gathered the tests and set them aside to compare later to their scores on the posttest which was administered on April 20, 1999. (See Appendix VII for the test).

Preparing the Instructor

Shortly after pretesting the students, the instructor and I met for a few hours to review my plans. I ensured that Jan was familiar with the four units of curriculum that I had developed, and I gave her copies of all of the units complete with assignment files

attached. I also ensured that she understood the pedagogy behind the units: the students must have ample opportunity to write and revise; ample and timely feedback on all assignments; and, recognition of purpose in writing. We agreed that I would deliver three of the units in her class via lectures and that she would deliver the fourth. She chose Direct Requests, and I committed to teaching Bad News Messages, Persuasive Messages, and Reports and Proposals. At that point I asked to meet her the following week so that we could synchronize as much as possible our assignment grading methods.

We met on January 26, 1999 to blind mark five assignments that she obtained from another English instructor at the Cranbrook campus. We each separately graded the papers and then compared these grades to establish interrater reliability. Jan and I both rated syntax, clarity of expression and organization highly, differing in our final scores by only 5% in all cases. It was clear that Jan and I, having worked in the same department for many years, tended to look for the same problem areas in students' writing and our styles appeared compatible enough to relieve any concern I may have had regarding discrepancies in results. The blind marking session was extremely valuable, and I strongly suggest it to anyone embarking on a similar study. Consistency of this nature goes a long way in not only validating results but also in providing peace of mind for the researcher.

Jan and I remained in close contact via phone and email for the rest of the semester. She often checked with me about curriculum issues, and we mutually sought advice from each other. Jan also kept attendance records and graded all assignments and tests for me.

Marking Guide

I also prepared a marking guide (Appendix VIII) for Jan to use. Having developed the curriculum, I felt I needed to provide a clear set of criteria by which to grade the pre/posttests. The guide encompasses the following elements:

- clear statement of purpose/problem 20%
- clarity of focus 15%
- recognition of audience 10%
- appropriate approach 10%
- clarity of organization 15%
- clarity of written expression 15%
- correct use of grammatical conventions 15%

A clear statement of the writer's purpose or problem is essential in the document and is weighted heavily. If the student fails to provide the reader with this information, then the writing has failed in its mission to convey a clear message.

Clarity of focus is important as well since a business document that wanders is inefficient and likely to be ignored. Students need to stay on task, be concise and economize their messages.

Recognition of audience and using the appropriate approach are both stressed in the curriculum units and the instructional lectures. Students must be aware of who is reading their messages in order to communicate effectively. If a sales letter is addressed to the wrong person in an organization, the message will likely be ignored. In order to facilitate the reader's being receptive to the message, the appropriate approach must be used. Students were instructed in the direct and indirect approaches as well as the AIDA

(attention, interest, desire, action) approach. They were required to choose the correct one and create a business or technical document that follows that particular plan. This approach makes the task of technical writing almost foolproof for the student since a formula, if you like, is applied to the writing of an effective missive.

Clarity of organization, clarity of written expression, and correct use of grammatical conventions all figure in the final overview of the written piece. If students fail to include these elements, then the previously mentioned criteria become lost in poor grammar, confused writing, and unclear thoughts that wander around the issue at task. It is important, then, that the marker consider all these elements when grading the pre- and posttests and assignment, and that the message is graded in a holistic manner which takes into account these criteria.

The Treatment

During the winter semester of 1999, the students of Jan Harkess' technical writing class studied the four above-mentioned units that I developed for this research project. Ms Harkess delivered one of the units and I delivered the other three units as a guest lecturer (see Chapter 4 for field notes relating to the teaching of these units). In addition, I formulated questions to include on the midterm exam for this class (Appendix IX). The students' progress was measured and assessed using these assignments, the midterm exam, and the pre- and posttests; I was concerned only with the pre and posttests. The students studied other curriculum material as well as is dictated by their course outline, but since my intent was to assess only the curriculum that I had developed, I gathered data specific only to the four indicated units.

Multivariate Relationships

Because learning does not take place in isolation, nor does it happen in a linear fashion for the most part, the study described the relationships among variables. Age, years of post-secondary education (if any), and attendance in class were all recorded and examined with reference to individual student's scores on pre- and posttesting to determine if indeed there existed any covariation (see Appendix VI for the forms used for this data collection).

Interviews

I interviewed the instructor at the end of the semester. After gathering information from her over the period of the semester by asking for her feedback regarding the curriculum materials and her assessment of the students' response to it, I decided to formalize the end of her part of the study by sitting down with her and talking over the project. This also became a rich opportunity to gain a summative evaluation from her.

The students were also interviewed formally. I had one-to-one conversations with 12 students on April 6, 1999; I asked how they found the materials and the assignments, and also asked what worked for them and what hindered their progress. I looked for the overall effect the curriculum had in the classroom and how they responded to it. My experiences during these sessions are recorded and analyzed in Chapter 4 of this thesis.

Data Analysis

Once all the scores were collected and charted, a Paired Sample t Test was used to analyze the data. The experimental design was such that student achievement was measured via two tests: the pretest and the posttest. Since the same students participated in both of the tests, their scores were not independent. Therefore, the difference in the

paired scores (posttest score minus pretest score) was used. Because the test aimed to determine directionality (i.e., did the scores improve, or did they deteriorate?), and because the pre and posttest samples were independent of each other, the one-tailed test was used. I was not interested in testing simply for a difference between scores; rather, I wanted to determine if the posttest scores were greater than the pre-test scores. All formulae used in the data analysis can be found in Appendix X.

Each of the four sections that comprised the pre- and posttest was analyzed separately. In other words, the improvement rates for direct requests, bad news messages, persuasive writing and report writing were charted individually. As well, all research hypotheses were formulated *a priori*.

The conditions for assigning the students to various categories followed these parameters:

Age	<20 or ≥20
Years of post-secondary education	HS (high school diploma) UP (ABE upgrading) PS (post-secondary courses)
Attendance in class	Good (≥80%) Poor (<80%)
Testing difference (pre and post)	Pass (10% improvement in score) Fail (<10% improvement in score)

Findings

Field Notes and Observations

I attended the TPW 091 class at the Cranbrook Campus of the College of the Rockies on five separate occasions. During all sessions, I recorded notes which follow chronologically.

January 19, 1999.

The instructor, Jan Harkess, introduced me to the class as an ABE instructor and thesis researcher. The class had been in session for one week by the time I arrived to deliver my information. Jan's TPW 091 class met twice a week, Tuesdays and Thursdays, from 8:30 am to 11:30 am from January 12th to April 15th, 1999.

Nineteen students were registered in the class. There were 14 who attended that day. I explained very carefully to the students that I was conducting a research project for my Masters' degree and I asked for their permission to use them as subjects in my study. I explained the voluntary nature of their participation and that neither their workload nor their grades would be affected by the study. All were willing to participate and seemed excited to contribute to the project. The instructor as well showed enthusiasm and expressed earlier to me that she felt this would be a great opportunity for her to gain insight into how well the students were learning the material.

I asked the students to sign a letter of permission (see Appendix V) and fill out an information sheet (Appendix VI) that asked them to specify their gender, age, previous education, and their feelings about their technical writing ability. They all complied. After I collected these documents, I spoke informally with the students and asked them what skills they wanted to improve in the class. Most students replied that they needed to

improve writing in general and they hoped that TPW 091 would afford them the opportunity to gain at least some confidence in creating written documents.

After conferring with the students, I administered the pretest (see Appendix VII). Several students seemed somewhat agitated at writing a test for which they were not prepared. Two students expressed concern that they did not know enough about technical writing to do well on the test. I tried to allay their and other's fears by explaining once again that the pretest would not affect their grades in the TPW 091 class and that they should simply try to do their best. They seemed relieved to a certain extent and began to write the test.

I allowed, with the instructor's permission, two hours for testing purposes. Four students finished very quickly (within 30 minutes), but a cursory glance at their work suggested that they had few skills to complete the test. The remaining 10 students finished at various times after that, with one student taking all the allotted time to complete the test. I also noticed immediately from the tests that the students did not use any particular formatting for their technical documents.

At the end of the session, I thanked both the students and the instructor for offering me their time and being so kind as to permit me to conduct my study in their classroom. I then spoke with the instructor and made arrangements for delivering a section of the curriculum within the following few weeks.

February 2, 1999.

I arrived at the Cranbrook Campus just prior to 8:30 am to find that Jan was ill and would not be attending her class that day. As I was prepared to lecture for the three-

hour class, I was not unnerved by the situation. The students did not mind that I would be the only instructor that day.

Fourteen students were present for the lecture on *Reports and Proposals*. It went extremely well with students asking numerous questions. I found them receptive to and interested in the content. Half way through the class, they began to ask questions about bibliography entries and expressed a fair amount of confusion about the topic. The students had already had a library orientation the week prior to this class but still felt unsure about proper formatting. Most students (at least 10) expressed confusion, frustration and some anger at not knowing clearly how to cite materials for their research. I spent approximately 25 minutes illustrating with examples the APA format. There was some lively dissent as I was told, "Jan didn't tell us that way." As I did not want to override Jan's instruction, I offered the class an opportunity to listen to my interpretation of the APA format with the proviso that they would check with Jan when she returned to the next class. The students took some comfort in that and settled in to listening to my instruction. I gave them ample time to ask questions along the way.

After the bibliography lesson, I used the template approach to writing reports and proposals. I explained the theory behind the subject area and used prepared overheads to aid the students in note taking. I asked them for sample topics and then reviewed the outline process with them. They received handouts with two sample outlines and a checklist for writing reports and proposals. I allowed an additional 20 minutes at the end of the class for any further questions; the students again used this time to gain more details about bibliography entries. The students also asked for a copy of a University of

Lethbridge information sheet regarding APA citations that I referred to in class. I left a copy for Jan to reproduce and distribute to the class.

My plan was to meet with Jan after the class and brief her, but I was unable to do so because of her absence that day. I left for Fernie to return to my duties at my campus and made a note to call her the next day.

February 23, 1999.

Eleven students attended this class; the instructor was also there but it was decided that while I lectured, she would busy herself with other work. Prior to my taking over the class instruction, Jan spoke to the class about their proposal assignment. She had a few concerns with some of the assignments and explained how they could be improved. She returned the papers with detailed feedback and then gave them the option of rewriting and resubmitting the papers for a better grade.

Jan then reviewed *Direct Requests*, which she had covered in her last class. She asked that the assignment given be used as a group writing assignment via a *listserve* that the class had set up. That way they could avail themselves of peer editing prior to submitting their assignments for grading. The students acquiesced quite readily to this option. Jan also introduced format and styles of letters and memos to the class and suggested that the block style be used for all assignments. She then talked about content, conciseness, clarity, audience and concept of goodwill. At that point she turned the lecture over to me.

I covered *Bad News Messages* thoroughly in the time remaining. The students had few questions and seemed to grasp the concepts fairly quickly. The only point they had difficulty with initially is the notion of never apologizing in a bad news message. I gave

them reasons for the widely held belief that it is counterproductive to say that one is sorry in a business missive, but it did take some time to convince them that this is an acceptable and, indeed, desirable course of direction to take. I gave them an in-class assignment of editing a poorly constructed bad news message and then assigned another writing task for homework.

February 25, 1999.

I returned to the class on their next session to review *Bad News Messages* and to introduce *Persuasive Messages* to them. This particular topic generated more in class discussion than any of the previous ones have. Every student save two had personal experiences with inadequate services, faulty goods, or collection agencies in the past, and they were most eager to learn ways to deal with the inconveniences. They also found it more “fun” to be the sender of a collection letter rather than the receiver. It is paramount that an adult educator respect her/his students’ life experiences and whenever possible include these experiences in discussions, assignments and lectures. Because the students found this topic useful, they seemed to truly enjoy hearing about one another’s experiences, and they anticipated the assignment by asking me if they could work in groups. The group concept further evolved to dividing the class into four groups of three students each (12 in attendance); the makeup of each group was decided upon by commonality of experience. One group, for example, was configured by comprising all those students who wanted restitution from a used car dealer. This system worked very well for me as I enjoyed giving the students autonomy over their work, and they felt a sense of ownership and practicality with the assignment.

Other, more traditional assignments were given due dates of later in March. There was ample time to give useful feedback to the in class group assignment, and all students were encouraged to revise and rewrite as often as possible.

March 16, 1999.

Other duties brought me to the Cranbrook Campus on this day, and I decided to visit my *surrogate* classroom. The students were pleased to see me and asked if I would be delivering a lesson today. I answered them in the negative, but added that I would like to see what they were working on, with Jan's permission, since they had their attention directed at their computer screens. I casually went around the lab and took note of their work. Many seemed to be comfortable with formatting letters and memos, and when asked, they all said that they felt a greater degree of comfort in composing business correspondence. They also said that the curriculum to that point had been useful and they felt they were learning useable concepts. A more in-depth look at what their final thoughts were is found in the April 6, 1999 entry when they were interviewed at greater length.

April 6, 1999.

Jan Harkess had set aside time during the class on this day at my request so that I was able to interview the students individually. I asked each student the following questions about TPW 091:

- What worked?
- What didn't?
- What helped you learn?
- What hindered your learning?

- What did you like about the course and curriculum?
- What did you dislike?
- What would you change about the course?
- Did you feel your ability to write technically improved?
- Do you have any other comments or suggestions?

Twelve students attended class that day, and I collated the responses in an anecdotal fashion.

I found it interesting that all students agreed on the following items: they all felt that they had improved their ability to write business correspondence (“ I feel more confident writing business letters”; “I write so much better now”; “I’ve definitely improved”); and they all commented that the handouts and concentrated instruction in the targeted curriculum sections were extremely useful when asked what worked for them (“The handouts were great”; “The handouts really helped”; “The instruction helped the most”). The other information that was forthcoming from the interviews reflected the students’ needs and expectations for the course.

What didn’t work?

- “ I didn’t like it when the instructor didn’t explain a concept thoroughly.”
- “I needed more class time to do assignments.”
- “I felt I needed instruction in spelling and grammar.”
- “Having to do something that wasn’t explained.”
- “Everything worked for me.”
- “I felt too pressured, too many assignments.”

What helped you learn?

- “The entire course helped me learn.”
- “I liked learning about different formats and approaches to writing a letter.”
- “Practicing the formulas of professional writing helped me.”
- “Doing the assignments helped.”
- “Assignments reinforced my knowledge.”
- “I hated the classroom, I wanted to do it on my own.”
- “Reviewing each chapter helped me.”
- “Lots of instruction.”
- “Doing the work and reviewing.”

What hindered your learning?

- “Nothing, I felt comfortable in this class.”
- “Having the work read to me, I’d rather do it on my own.”
- “Nothing.”
- “Not having enough time in class to do the work.”
- “Not being able to always understand what I was supposed to do.”
- “I have trouble with reading comprehension and had to reread chapters.”
- “Some assignments were boring.”
- “Too much pressure, not enough time.”
- “Nothing, I liked the formulas for writing.”

What did you like about the course and curriculum?

- “It was very useful.”
- “It was a great learning experience.”
- “I gained a lot of skills and feel prepared for work.”
- “I liked the instruction.”
- “It was interesting.”
- “I enjoyed everything, it kept me interested.”
- “I didn’t find this course useful or helpful.”
- “The part about letters and memos was the best.”

What did you dislike?

- “I needed more instruction.”
- “I didn’t have enough time for all the work.”
- “Too American. I wish it was more Canadian.”
- “I liked everything.”
- “Nothing.”
- “I didn’t like when the instructor read outloud.”
- “Too much homework.”
- “I don’t like doing research.”

What would you improve?

- “Have more class time for doing assignments.”
- “I would like public speaking skills added.”
- “Nothing.”
- “Use more Canadian examples and books.”

- “Give more class time to work on projects.”

Any other suggestions?

- “Students should have computer skills before joining course.”
- “I generally liked it.”

In analyzing the responses, it is interesting that while 12 out of the 12 students interviewed responded that they had definitely improved their ability to write technical English, some felt that there were too many assignments and not enough time to work on them. This frustration may be a common concern with adult learners who have additional duties with families and work. Even though there may not have been enough time for students to feel a level of comfort in deadlines for assignments, they overwhelmingly felt that the numerous assignments helped them learn.

The interviewed students also commented that using the format or template approach to technical writing helped them understand how to write business correspondence. According to nine out of the twelve students, they were surprised that there exists an actual formula or template to most business writing and that using it made all the difference in whether or not they composed a well-written document. Several commented that it was a simple concept and expressed dismay at never having discovered it prior to this class.

April 15, 1999.

As I was unable to meet with Jan personally because of conflicts in our respective schedules, I interviewed Jan by telephone. I asked her some specific questions about content and what worked well and what did not; I also gave her the opportunity to freely discuss the curriculum without formal questioning.

For the most part, Jan enjoyed the course materials. She found them organized and the assignments relevant. She also thoroughly enjoyed the team teaching approach we used with my delivering three of the lessons. On those days, she felt more able to concentrate on giving the students individual attention as I relieved her of lecturing and preparation duties.

Jan commented that she would enhance some of the material so that the students would have more practice in basic writing skills. This is something that neither she nor I concentrated on since we assumed students would have those skills prior to enrolling in TPW 091. She found that several students were weak in sentence structure and this was certainly borne out in the pretesting scores of grammar conventions.

Jan's other comment about what did not work was that fact that the letter and memo formatting (salutations, dates, closures, spacing, headings, etc.) which was under her purview needed more instructional time assigned to it as the students did not fully acknowledge its overall importance in business writing. She was more concerned about this than any other aspect of the course.

Jan enjoyed the curricular materials that I presented and felt that the handouts and lecture notes that I presented for the four units were very useful. She was able to refer to them when creating the midterm and final exams, for instance, which she found helpful in easing her workload somewhat. Jan also was pleased that my experiment had not created noticeably more work for her, especially since she had anticipated that it would.

As I mentioned earlier, Jan and I spent time determining that our grading schemes and styles were similar, and when they were not, we worked toward reaching consensus. She commented that this was beneficial to her in two ways: first, she felt confident in

taking on the responsibility of providing me with the data I needed; and second, it helped her reaffirm that she was on track with her grading of other students in her other classes, and it became a professional development exercise for her.

Overall, Jan was pleased with the course and felt that the students definitely showed improvement in their writing skills. She made the comment that the TPW 091 students were now better equipped to move on to other, higher level writing courses if they so choose.

Data Analysis

After all the data were compiled (raw data can be found in Appendix XI), they were run through a Paired Sample t Test as outlined earlier in the methodology chapter. Keep in mind that in this experiment, $t = 1.796$ and the probability of committing an error in rejecting the true null hypothesis was determined as $\alpha = 0.05$. The actual calculated probability value for each unit is noted.

The following table shows the mean of the pre and posttest totals of each of the units, their totals and the t value for each unit.

Table 1

A Comparison of Pre and Posttest Results In Each Unit

	Pretest mean	Posttest mean	t
Direct Requests	53.833	76.583	4.76*
Bad News Messages	18.250	59.167	5.12*
Persuasive Writing	42.917	70.833	6.10*
Proposal Writing	10.250	29.750	2.64*
Total	125.250	236.333	9.568

* indicates significant improvement as $t = 1.796$ and $\alpha = 0.05$

There is, therefore, very strong evidence to suggest that students improved their ability to write in a technical and business manner. All sections show marked improvement, with Proposal Writing showing less improvement. The total also shows an overall significant improvement for the experiment class ($t = 9.56, p = 0.0000$).

Age.

Initially, I wanted to look at age as a factor in improvement or success rates for the participants. However, this particular class had little deviation in age. Because of this significant lack of deviation, it was not possible to hypothesis test (was age a factor in improvement rates) regarding any effects due to age. Eight students were between the ages of 19 and 29; two students were in their thirties; and 2 students were in their forties.

Table 2

Age

Mean Age	Range	Standard Deviation
28.500	27.000	8.152

Previous Education.

Of the 12 completing students, 1 (8.3%) had less than high school completion with no recent upgrading; 5 (41.7%) were high school graduates; and 6 (50.0%) had studied some form of upgrading prior to entering the course.

Attendance.

It appears that attendance was sporadic: 5 (41.7%) attended 18 out of a possible 21 classes; 1 (8.3%) attended 17 classes; 1 (8.3%) had perfect attendance; and the other 5 (41.7%) attended between 11 and 16 classes. Out of all twelve students, 7 (58.3%) attended 80% or more of the classes.

It is of interest to note that the student who attended all 21 of the classes did not improve as much as the student who attended only 11 classes. However, on checking the comments on perceived ability, I noticed that the student with perfect attendance felt she had very poor skills and found it difficult to write. As well, she declared a serious problem with reading comprehension. The student who attended the least but had the greatest improvement felt that he needed some improvement, but assessed himself as having adequate skills as he began the class.

I can only conclude that attendance did not figure as prominently in increasing improvement rates when students entered the class with previous skill sets in technical writing. We instructors often hold attendance in our classes as sacrosanct; however, it appears, if I may extrapolate to the larger field, that motivated, skilled, adult students tend to learn on their own and make improvements where needed. This reinforces Knowles' theories on adults being self-directed in their own educating process.

Perceived Ability.

Prior to beginning TPW 091, the students were asked to self-assess their abilities in technical writing. The following is a summary of what students felt were their weaknesses:

Table 3

Perceived Ability

Number of students	Self-Perception of Ability
8 (66.7%)	needed improvement
4 (33.3%)	found it difficult to write technical English
2 (16.7%)	believed they had poor writing skills
4 (33.3%)	felt they write well
1 (8.3%)	was an ESL student
1 (8.3%)	needed help with grammar
2 (16.7%)	needed help with sentence structure
3 (25.0%)	needed help with honing skills
1 (8.3%)	had poor reading comprehension

I believe that adult students are generally accurate in their assessments of their abilities. However, the class instructor did comment in our summative interview that she felt students needed more instruction and practice with grammar conventions and sentence structure; the students' comments did not reflect this concern as only 3 (25.0%) students responded to needing help with these items.

The Curriculum UnitsDirect Requests.

All students showed some improvement in their posttest scores for this unit ($t = 4.76, p = 0.0003$). Since the improvement rate was not as significant as in the other units, I concluded that, generally, students had some skills in writing simple, direct requests prior to enrolling in TPW 091 and needed only some improvement in this area.

Bad News Messages.

Eleven students improved their scores on the Bad News posttest ($t = 5.12, p = 0.0002$); one showed no change.

Persuasive Writing.

There was marked improvement in the scores for this part of the course ($t = 6.10$, $p = 0.0000$) with eleven students showing improvement and one showing no change in pre and posttest scores.

Proposal Writing.

This unit produced the least improvement ($t = 2.94$, $p = 0.012$). Even though this indicates improvement, half the students (6 out of 12) showed no improvement. Further, all those who showed no improvement received scores of 0 on both the pre and posttests. This led me to conclude that, although improvement was seen, either the unit or the test (or indeed both) needed to be reworked. A score of 0 on both the pre and posttests indicates a lack of understanding of the unit on the part of the student.

The students were asked to write a proposal outline on the pre and posttests, and, in both cases, half the class failed to write an acceptable one. This may be due to a faulty instructional unit, or to the fact that, on both tests, this was the last question; perhaps some students ran out of sufficient time to complete the question. I did observe while invigilating the test that all students used all of the allotted time to complete their tests. One student, however, received a score of 100% on the posttest, up from 74% on the pretest. Another student, who showed the greatest improvement, went from a score of 0 on the pretest to 60% on the posttest.

After analyzing these data, I contacted the instructor again to ask how the students fared on their proposal writing assignment. I outlined my concerns about half of the class failing to improve on the posttest. She claimed the students all did at least fairly well on the proposal assignment; no one failed. This led me to believe that asking the students to

write a proposal “outline” on both the tests as opposed to a proposal *per se* (due to time constraints it was impossible to ask students to write a proposal in that length of time), either confused them or did not translate well into their ability to successfully accomplish the task. Because my original task called for assessing their ability to write proposals, I feel this part of the experiment failed to fulfill that mandate. Instead, what I did discover is that it is impossible to assess proposal writing by asking the students to design a proposal outline. In addition, I would be incorrect if I were to think that these results suggested anything other than I made an error in judgment in trying to assess something that logistically could not be done within the time constraints imposed on the testing situation. If I were to repeat the experiment, I would assess the proposal writing unit by grading student assignments, not by pre or posttesting for improvements in the outline process.

Overview

Overall, there was marked improvement in the students’ technical writing ability ($t = 9.56, p = 0.0000$). This result also bears out the fact that a sound, organized program of study where students have many opportunities throughout the semester to practice writing through a variety of relevant assignments, receive feedback in a timely and supportive fashion, and are encouraged to rewrite and redraft their assignments regularly produces improvements in technical writing ability for adult learners. All students improved their pre and posttesting scores by over 10%. According to the results of this experiment, the students of TPW 091 are better skilled at technical writing having studied the course.

Discussion and Recommendations

Discussion

The experiment in the TPW 091 class afforded me the opportunity to test out curricular materials and establish a framework for determining whether adult learners improve their ability to write technical English after having been exposed to the treatment. While I discovered that the learners in that particular class did make significant improvement, I recognize that the experiment is valid for only that class with its set of particular variables. Nevertheless, the experiment was extremely valuable to my colleagues and me in many ways.

First, I found sincere helpfulness and support among my colleagues that indicated to me that the work I proposed was worthwhile and necessary. Members of the Access Education department and other instructors not involved in the project were interested in the results and how that translated into useful information for their own classes. The testing was also important to the provincial articulation group as TPW 091 is fully articulated within the province of British Columbia and these positive results confirm this acceptance.

Second, the students learned a great deal and were exposed to a team teaching experience that they would not normally have had. From their comments, I gleaned that they enjoyed having two instructors, as both Jan and I brought different perspectives to the teaching of technical writing.

Third, the experiment gave the post-secondary system of BC a new set of curricular materials to deliver throughout the province. Although there needs to be some honing of some of the units (proposal writing for one), the framework is in place for a

successful course that the learners seemed to enjoy and from which they learned new skills and improved on some forgotten ones.

Recommendations

I believe further work needs to be done in the area of developing exercises and assignments devoted to having students practice their writing. Instructors never seem to find enough meaningful assignments in print and always scramble to develop their own. I would recommend that a database be developed in the province, or even interprovincially, that would contain numerous assignments, separated by topic and learning outcomes, which specifically target the learner's need to write and rewrite. Such a resource would ensure that learners would not go "hungry" for varied and relevant materials with which to practice and hone their skills.

The experiment also reinforced what the literature on the topic of teaching technical writing to adults says: have the students write many assignments; give timely and meaningful feedback; and provide adult learners with the opportunity to improve their skills by being supportive, having the necessary resource materials available and respecting their ability to make choices in their education. I cannot stress strongly enough how important it is that anyone who is designing curriculum for adults must keep in mind the experience the learners bring to the classroom. TPW 091 tried to incorporate meaningful assignments and appropriate learning outcomes for adults; this, I believe, helped the students learn and improve their writing skills.

This experiment, as well, provided me with the humble and yet edifying experience of having created a body of work that proved successful, even though in a small sampling of students. I learned much from the students of that class, not the least

of which was how diligent, focused and hard working they are. Life long learning is not just an abstract concept to them; it is a way of life.

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Appendix A

Interview Blueprint

Guiding Question	Theoretical Issue	Relevance	Question
1. introduction		to establish comfort level	1. 1. Tell me about what you do at the college.
2. outcomes	do students gain transferable knowledge	to determine if writing courses make a difference in students' ability to write well	1. What is the importance of teaching college students good writing skills? 2. What are the learning outcomes you expect from the course you teach. 3. Do you think your completed students transfer their knowledge to other courses and situations?
3. curriculum	constructs of an effective writing course	to determine what constitutes an effective writing course?	1. What do you consider an effective writing course? 2. What curriculum would you include?
4. evaluation	the instruments to use in evaluating writing	to determine effective evaluation tools	1. What do you use for evaluating your students? 2. Do you pre and post test your students? 3. If yes, what do you use? 4. If no, why not?
5. feedback	what constitutes constructive feedback	to determine the optimal balance for effective feedback	1. What is criteria -based feedback? 2. What is reader-based feedback? 3. Can you describe a good balance between the two?
6. conclusion		to wrap up interview	1. Is there anything else you would like to add?

Appendix B

Interview Conventions

Convention	Meaning
[name]	Substituted for name of person identified by respondent or interviewer
[institution]	Substituted for name of institute identified by respondent or interviewer
{come in?}	Indicates best guess at a word or phrase that was too faint to transcribe from the tape
{?}	Indicates a word or phrase that was indiscernible on the tape
[laughter]	indicates laughter
[cough]	indicates coughing or throat clearing
[stomps foot]	indicates action by respondent

Appendix C

Interview

SIDE A	RESPONDENT	INTERVIEWER
053	<p>And then some how you know through certain ways of reseeing or re-envisioning it turns into a coherent pattern. So when you're revising your essay that's what happened I said you know, {?}. The students really have to fight it because they want you to teach them alteration and all those mechanics and that's because it's small and handleable but he agreed with me that um it makes almost no difference in the real writing skills but of course again you get into assessment I guess this is a whole area talked about in the other question.</p>	<p>uh-huh uh-huh</p>
059	<p>The whole other area is you have to be sure yourself that your assessment um [throat clearing] criteria are valid and then you don't say to the students things like um you know editing, issues are unimportant and then {?} and then on a midterm or something mark them down for spelling or punctuation you have to make sure your philosophy is consistent. So I don't know that's um a few thoughts and {?}.</p>	<p>right uh-huh OK No, that's great. Who, um, your students come from where? Are they high school students are they...?</p>
065	<p>Oh um, let's see know in English 100 in [institution] are most all mature students and Um those mature students um let's see I think I have only one from high school, the others are enrolled in some specific program for example Social Work and they are working through it or I'm not exactly sure for example some are working through [institution] an extension course through [institution]. Those mature students have specific occupational job related needs in English 100 through the [institution] here. They are students out of high school here.</p>	<p>Uh-huh What do you feel, what do you feel is importance of teaching college student you say have a variety of them, that th</p>

	[cough]	are from various walks [indiscernible because of respondent's coughing] program or out of high school or whatever.
	RESPONDENT	INTERVIEWER
072	Oh um. You mean why is it {?} for the future. {?} That's a very tricky question. It's more controversial than it seems because society says that it values good writing skills. I'm not really sure it does. [laughter] Take simple ah take a simple exercise like editing for economy. Um there really is a common thread between teaching students to write for the working norm or teaching students to be future academics because if you read hum Richard Lanham on Revising Business Prose and that kind of thing we can show students how to create mainly prose and we can show them how to cut it down to the bone. They are working against their natural bent though and in a sense the natural bent in the business world which occasionally uses needless rhetoric for the purposes of inflating positions and um hum. If for example	What do you think the importance of teaching them good writing skills is? What are some of your feelings about that? Right uh-huh
082	students were to take what I say completely seriously and edit their prose so that it's lean, clean, mean and stylistically beautiful that might serve them in the academic world but it might actually work against them. If um they are in a position at a credit union where they are sending memos to employees and they need to impress the employees with blown up prose. I mean what I'm saying is yes there is some blown up prose that we see through and there's others that seem to	uh-huh uh-huh uh-huh
088	function quite nicely in the business world. So um good writing skills um and in a sense I guess it sounds callous but you could take it from two views: the idealist would say that good writing skills are absolute and always	uh-huh

	valued. um I don't know it would be nice to believe that but the world is not a perfect place . The realist would say there are all kinds of good writing skills and perhaps the person who is most suited is the person who has the most wardrobes of styles to choose from and that's kind of a rare person, the person who can adopt a persona and say okay I'm going to well here's an example um say um say, you're a grammarian, you know sometimes when you are talking to people you know that you can say something in a grammatically-correct way, uh, for example	
	RESPONDENT	INTERVIEWER
094	I said " I feel good today", um that's grammatically correct. Most people don't perceive it as correct because it uses a subjective completion because it's an intransitive verb, " I feel", and so frequently when you're talking you have to make. er, or when you're writing you have to make the distinction between your audience and what they want, almost juggling these things you know so its not as simple as what are good writing skills. One person can argue that that's incredible attention to audience and the person who is the best writer has an incredible wardrobe of styles to choose from but the person could argue that that writer has no integrity but you are simply choosing your styles to suit bodies. Where is your integrity?	uh-huh uh-huh uh-huh
102	Could be easily argued that hum most persons who slight good grammar for the sake of audience use good grammar because your audience knows wrong grammar. What do you do? That's the other good question. So I don't um I don't really know I think you would have to take into account your philosophical orientation. Are you ready for expediency in the business world hum why you are writing ,of course [laugh] these are not philosophical issues that you don't want to discuss with an individual members. You just have to come in and uh, what I've heard	uh-huh uh-huh Right uh-huh uh-huh

157	<p>life in which immigration has effected you {?}{?} you're just going to make vague generalities I said in n contrast look at this essay a student did on reasons why I'm not or why I am a feminist and I said, gosh, it's really difficult to write on this topic. Well he'd been to a rally in Kamloops with a few feminist friends and afterwards he marched down the street chanting {?}. I read [name] part of his essay without identifying him and um and I looked at the look on her face and said what do you think and I could see she was blown away.</p>	<p>uh-huh right uh-huh right</p>
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Appendix D

Lesson Plans

Lesson Plan # 1

TPW 091

Unit # 1: Direct Requests

Topic: writing direct requests in the form of letters, memos and other brief messages

Learning Objectives: After studying this unit students will be able to:

- Clearly state the main idea of each direct request
- Indicate confidence that the request will be filled
- Be familiar with the direct method of writing brief messages
- Provide sufficient detail for the reader to be able to comply with request
- Clarify complicated requests
- Close with a courteous request for specific action

Class Time: 3 hours

Room: Room 153 Computer Lab, College of the Rockies, Cranbrook

Equipment needed: overhead projector, screen, white board, markers

Visual Aids: prepared overheads, handouts

Delivery Mode: lecture and practice samples

Instructor/Learner Activities:

1. Introduction to Direct Requests (lecture):
 - Direct statement of request (effective wording)

- Justification, explanation and details (complex orders, specifications, format)
 - Courteous close (summary of desired action, benefits, time limits, cordial close)
2. Requesting Routine Information (students given sample requests to edit in class)
- Requests to company insiders
 - Requests to other businesses
 - Requests for Claims and Adjustments (lecture and then student practice)
 - Direct statement of request (timeliness, state need for correction, be factual)
 - Justification, explanation and details (honesty, specificity, non-argumentative)
 - Courteous close (summary of desired action, details, benefits of complying)

Assignments:

- # 1. Students are required to analyze the strengths and weaknesses of a handout document of a routine request for information and then to revise the letter.
- #2. Students are given a case study regarding a request for an adjustment and are asked to write a letter asking for the adjustment and explaining the concern.

Evaluation:

Students' assignments will be evaluated as to how successfully the student follows the direct plan of requesting information (direct statement of request; justification, explanation and details; courteous close) and on grammar, syntax and format.

Lesson Plan # 2

TPW 091

Unit # 2: Bad News Messages

Topic: writing bad news messages in the form of letters and memos

Learning Objectives: After studying this unit students will be able to:

- Choose correctly between the indirect and direct approaches
- Establish the proper tone in the message
- Present bad news in a reasonable and understandable way
- Write messages that motivate the reader to take constructive action
- Close messages so that the reader is willing to continue a business relationship with the firm

Class Time: 3 hours

Room: Room 153 Computer Lab, College of the Rockies, Cranbrook

Equipment Needed: overhead projector, screen, white board, markers

Visual Aids: prepared overheads, handouts

Delivery Mode: lecture and practice samples

Instructor/Learner Activities:

1. Indirect Plan

- Buffer (easing the pain of the bad news; neutral, relevant lead-in)
- Reasons supporting the negative decision (reasonableness, details, unapologetic)

- Clear, diplomatic statement of the bad news (avoid negative wording, minimize space and time devoted to bad news)
 - Helpful, positive close (build goodwill)
2. Direct Plan
 - Use when the message has little personal impact
 - Start with a clear statement of the bad news
 - Proceed to the reasons for the decision
 - End with a courteous close
 3. Conveying bad news about orders
 4. Communicating negative information
 5. Refusing adjustment of claims and complaints

Assignments:

- # 1. Students are required to analyze the strengths and weaknesses of a handout document conveying bad news about a shipment of goods and then to revise the letter.
- # 2. Students are given the task of explaining by letter why payments to a company's supplier are late (new computer system problems).

Evaluation:

Student assignments will be evaluated as to how successfully they follow the unit instructions on choosing between the direct or indirect method of delivering bad news; how they develop their message; and how they format and use grammar and syntax in the message.

Lesson Plan # 3

TPW 091

Unit # 3: Persuasive Messages

Topic: writing persuasive messages in the form of letters and memos

Learning Objectives: After studying this unit students will be able to:

- Use a persuasive appeal appropriate to the audience
- Apply the organizational plan for persuasive messages
(attention, interest, desire, action)
- Write a message persuading someone to take action or make an adjustment
- Apply the techniques of persuasion to prompt someone to pay an overdue account

Class Time: 3 hours

Room: Room 153 Computer Lab, College of the Rockies, Cranbrook

Equipment Needed: overhead projector, screen, white board, markers

Visual Aids: prepared overheads, handouts

Delivery Mode: lecture and practice samples

Instructor/Learner Activities:

1. Preparing to write a persuasive message (what and who)
 - Appealing to the audience (needs and appeals)
 - Emotion and logic (avoid emotional reactions)
 - Credibility (supply objective and specific evidence)

2. Organizing the message (use AIDA plan)
 - Attention (you-oriented, relevant, personalized)
 - Interest (details, relate benefits to audience)
 - Desire (provide relevant evidence, draw attention to any enclosures)
 - Action (describe precisely the desired action, restate benefit, make action easy)
3. Writing persuasive requests for action
4. Writing persuasive claims and requests for adjustment
5. Writing collection messages

Assignments:

- # 1. Students are required to write a three- to five-paragraph persuasive request expressing dissatisfaction with a particular product or service.
- # 2. Students are required to work in pairs to role play a debtor and a creditor in a collection situation. This is an oral assignment and students are required to research collections by interviewing a loans officer at their financial institution prior to presenting their work.

Evaluation:

Students' written assignment will be evaluated on how well they used the AIDA plan as well as their correct use of grammar, syntax and format.

Students' oral assignment will be peer evaluated on their research, presentation techniques, and persuasiveness in collecting the debt.

Lesson Plan # 4

TPW 091

Unit # 4: Reports and Proposals

Topic: writing formal reports and proposals for business purposes

Learning Objectives: After studying this unit students will be able to:

- Identify the qualities of a good business report or proposal
- Make decisions about report format, style and organization
- Use direct or indirect order when appropriate
- Organize informational reports by using topical divisions
- Organize analytical reports by using conclusions and recommendations

Class Time: 6 hours (2 classes)

Room: Room 153 Computer Lab, College of the Rockies, Cranbrook

Equipment Needed: overhead projector, screen, white board, markers

Visual Aids: prepared overheads, handouts

Delivery Mode: lecture

Instructor/Learner Activities:

1. Using reports and proposals as business tools
 - What makes a good report and proposal
 - How companies use reports and proposals (monitoring operations and activities, implementing policies, complying with regulations)
2. Gathering and Interpreting Information
 - Define the problem

- Outline the issues for investigation
 - Prepare a work plan
 - Conduct research
 - Analyze and interpret data and draw conclusions
 - Develop recommendations and prepare final report
3. Preparing to write the report
 - Format and length
 - Structure and key points to cover
 - Direct vs. indirect order
 - Division of ideas
 4. Informational reports
 5. Analytical reports
 6. Creating a proposal using the Scientific Method

Assignments:

- # 1. Students are required to develop a formal proposal on a topic of their choice which will then be used to develop an informational or analytical report, as their topics dictate.
- # 2. Students are required to use the above proposal to develop a formal report which will include an oral presentation to the class.

Evaluation:

Students' assignments will be evaluated on content; structure; style of writing; appropriateness of organizational style; use of visual aids, charts and graphs; thoroughness of research; presentation skills; and format of document.

Appendix E

Letter of Consent

I am conducting a study of the effectiveness of teaching technical writing. The purpose of this study is to assess students' improvement rates after having studied technical writing curriculum and to provide me with materials for a research project linked to a Master of Education degree. I would like your permission to participate in this study.

As part of this research, you will be asked to write a pretest; have your scores on targeted assignments recorded for my use; write a posttest; and possibly be informally interviewed by me regarding your assessment of and feelings about your improvement, if any, in writing in a technical manner. This will take place during the January - April 1999 semester and will involve only the class of Ms Jan Harkess.

Please note that all information will be handled in a confidential and professional manner. When responses and data are released, they will be reported in summary form only. Further, all names and any other identifying information will not be included in any discussion of the results. Your participation is strictly voluntary and you are under no obligation to participate in any way. You also have the right to withdraw from the study without any prejudice at any time.

If you choose to do so, please indicate your willingness to participate by signing this letter in the space provided below.

I appreciate your assistance in this study. If you have any questions, please feel free to call me at 250.423.4691. Also, feel free to contact the supervisors of my study at the University of Lethbridge: Dr. Richard Butt or Dr. Leah Fowler at 403.329.2111.

Cindy Oliver
Access Education Department
College of the Rockies
250.423.4691

Assessing Technical Writing Improvement for Adult Learners

I agree to participate in this study.

Name

Signature

Date

LETTER OF CONSENT

I am conducting a study of the effectiveness of teaching technical writing. The purpose of this study is to assess students' improvement rates after having studied technical writing curriculum and to provide me with materials for a research project linked to a Master of Education degree. I would like your permission to help me with this study.

As part of this research, you will be asked to deliver three units of curriculum in your TPW 091 class; grade associated assignments and share those grades with me; be interviewed by me at the mid way point of the semester and at the end; allow me to deliver one unit of curriculum in your class; allow me to sit in on your class four or five times and note my observations; and, blind mark five assignments to check our grading reliability.

All information will be handled in a confidential and professional manner. Your participation is strictly voluntary and you are under no obligation to participate in any way. You also have the right to withdraw from the study at any time.

If you choose to do so, please indicate your willingness to participate by signing this letter in the space provided below.

I appreciate your assistance in this study. If you have any questions, please feel free to call me at 250.423.4691. Also, feel free to contact the supervisors of my study at the University of Lethbridge: Dr. Richard Butt or Dr. Leah Fowler at 403.329.2111.

Cindy Oliver

Assessing Technical Writing Improvement for Adult Learners

I agree to participate in this study.

Name

Signature

Date

Appendix F
Student Information Sheet

NAME: _____

STUDENT #: _____

MALE: _____ FEMALE: _____

AGE: _____

PREVIOUS EDUCATION:

High School Graduate Yes: _____ No: _____

Previous upgrading (ABE) student Yes: _____ No: _____

Have you studied Technical Writing at the college level before this class?

Yes: _____ No: _____

If yes, please list courses:

WRITING ABILITY

Describe in a few sentences your technical writing ability. Do you feel you have good writing skills? Does writing in a technical way come easily to you? What would you like to improve during this course?

Appendix G

Pre and Posttest

1. You are planning a trip to the Caribbean. Write a letter to a travel company requesting information about their packages.
2. For many years, Wendy's International has served Pepsi products in its outlets. Due to recent acquisitions, PepsiCo has become a competitor to Wendy's. In view of this, management has decided to terminate the contract with PepsiCo and switch to Coca-Cola products. Some managers at outlets won't be happy with this decision because they are loyal to their local suppliers. Write a memo to the owner's of the franchises telling them that Pepsi is out and Coke is in.
3. Write a letter asking the mayor of your home town to sponsor you at this year's fund raising walkathon.
4. Write an **outline** for a report which makes recommendations about improvements needed at the college cafeteria.

Appendix H**Marking Guide****Pretest/ Posttest/ Course Assignments**

Criterion	Percentage Weighting
Clear statement of purpose/problem	20
Clarity of focus	15
Recognition of Audience	10
Appropriate approach	10
Clarity of organization	15
Clarity of written expression	15
Correct use of grammatical conventions	15

Appendix I

Midterm Exam Questions

Analyze these letters for strengths and weaknesses, then revise according to lecture guidelines.

Direct Requests

Dear Bernard Graves:

After receiving your shipment of returned books, we checked our records to see why we had sent them to you in the first place. Our records show that you were late in returning your card indicating that you did not want the selections. As you know, we will automatically send you the month's new books unless you specifically ask not to receive them by our clearly stated deadline. This policy enables us to see that our subscribers have access to the newest books as soon as possible.

However, you are in luck. Because we value your membership in the Read-a-lot Club, we are crediting your account for \$29.18 - the full price of the books that you returned!

In the future, please try to return your reply card more promptly so that you won't face the inconvenience of returning the books. In any case, we want to express our thanks for your long term patronage of the Read-a-lot Club. We think you will want next month's selection, which is a murder mystery by John D. MacDonald.

Bad News Messages

Dear Margaret Bruinsma:

We'd like to express our thanks for your letter of about six weeks ago. However, we regret to inform you that your claim for an adjustment on the Model XL dictation unit has been denied. Careful inspection by our engineering staff confirmed our original supposition that the unit has been damaged by improper treatment, either by user or carrier.

Are you aware of the possibility that the Model XL dictation unit could have been dropped or abused by your employees? If this has not happened, you may file a claim against the carrier. It is more than likely that the unit was damaged in transit, because according to you, the unit has never worked properly and we are clearly not at fault.

Our charges for repairing the unit will be \$50 to cover labour costs; the parts will be replaced at no charge under the terms of our 90-day warranty. Please remit payment promptly.

We hope to see your representative at our sale, which will be held soon; details appear in the promotional literature that is enclosed.

Persuasive Messages

Dear Denise Dietrich:

It's United Way time again. We need somebody to head up the drive. Could you possibly take on the job?

Serving as the chairman shouldn't take too much of your time. You have to attend a couple of meetings with the United Way people downtown, but they generally buy you lunch. You will be provided with pledge cards to pass out to our employees, and you will be briefed on techniques for motivating people to donate to the United Way. The biggest part of the job is taking the pledge cards around to all the employees and giving them a little sales pitch. After a couple of days, you go around again and collect the cards. Some companies have contests, but you don't have to go to all that trouble if you don't want to.

Last year, Harry Huntley did a fine job. He had to twist a few arms, but he managed to achieve 100% participation. Although he doesn't want to run the campaign again, he says that he will be willing to give you a hand with the paper work which can get a little confusing.

As you know, the president is trying to build better relations between the company and the community. He views the United Way Campaign as an important vehicle to projecting a positive image to civic and community leaders. If you do a good job, he is sure to be impressed.

It would be appreciated if you could get back to me about this immediately. If you can't do the job, I'll need to find someone else as soon as possible.

Appendix J

Formulae

All hypothesis testing was conducted with the criterion of rejection, the significance level of the test, set at $\alpha = 0.05$. Alpha (α) is the probability of committing a Type I error; that is, rejecting a true null hypothesis.

The test statistic (Zar 1984:121) for the *paired-sample t Test* is

$$t = d/s_d \quad (\text{Equation 1})$$

where d is the mean of the pair-wise differences

s_d is the standard error of the mean.

The decision rule used to determine whether or not to reject the null hypothesis is that if $t \geq t_{\alpha(1),v}$, then there is sufficient evidence to reject the null hypothesis in favour of the alternate. The critical value ($t_{\alpha(1),v}$) for the *paired sample t Test* is $t_{0.05(1),v}$, where 0.05 is the α value, (1) designates a one-tailed test, and v is the degrees of freedom. The degrees of freedom is calculated as the sample size less 1, namely $n - 1$. Critical values can be looked up in standard tables of critical values of the t distribution and are provided in most statistical texts. In addition, computer programs used to calculate the test statistic also calculate the "exact" probability of obtaining the t value; and hence, these probability values that accompany the computer output be used to decide whether or not there is sufficient evidence to reject the null hypothesis.

Appendix K

Raw Data

Student	Age	Prev ed	Attend	Complete	PA 1	PA 2	PA 3	PA 4	PA 5	PA 6	PA 7	PA 8	PA 9	PRE_DR	PRE_BAD	PRE_PER	PRE_PRO	PRE_TOT	POS_DR	POS_BAD	POS_PER	POS_PRO	POS_TOT
1	20	1	18	1	1	1	2	2	2	2	2	2	2	62	8	11	0	81	53	49	36	20	158
2	25	2	11	1	1	2	1	2	2	2	2	2	2	51	10	36	0	97	85	74	83	0	242
3	19	1	18	1	2	1	1	2	2	2	2	2	2	33	0	16	0	49	43	8	65	50	166
4	31	1	18	1	2	2	2	1	2	2	2	1	2	71	15	72	0	158	97	92	92	60	341
5	25	2	18	1	1	2	2	1	1	1	2	2	2	72	36	80	74	262	90	53	80	100	323
6	23	2	10	2	2	2	2	2	2	1	1	2	2	87	47	71	0	205	0	0	0	0	0
7	26	0	16	1	1	2	2	2	2	2	2	2	2	83	22	66	29	200	94	67	80	40	281
8	34	2	17	1	1	1	2	2	2	2	2	2	2	45	10	11	0	66	99	67	66	0	232
9	26	2	5	2	2	2	2	2	2	1	2	2	2	23	0	0	0	23	0	0	0	0	0
10	29	2	15	1	2	2	2	1	2	2	2	1	2	51	15	52	0	118	77	75	79	0	231
11	21	1	15	1	1	2	2	2	2	2	1	2	2	68	37	40	20	165	87	37	73	87	284
12	26	2	18	1	2	2	2	1	2	2	2	1	2	68	40	48	0	156	79	70	73	0	222
13	24	2	2	2	2	2	2	1	2	2	1	2	2	84	0	33	0	117	0	0	0	0	0
14	40	2	11	1	1	1	2	2	2	2	2	2	2	13	14	61	0	88	46	95	78	0	219
15	46	1	21	1	1	2	2	2	2	2	1	2	1	29	12	22	0	63	69	23	45	0	137
																							MEAN
																							STD DEV

Student	DR	BAD	PER	PRO	TOT
1	-9	41	25	20	77
2	34	64	47	0	145
3	10	8	49	50	117
4	26	77	20	60	183
5	18	17	0	26	61
6	-87	-47	-71	0	-205
7	11	45	14	11	81
8	54	57	55	0	166
9	-23	0	0	0	-23
10	26	60	27	0	113
11	19	0	33	67	119
12	11	30	25	0	66
13	-84	0	-33	0	-117
14	33	81	17	0	131
15	40	11	23	0	74

Description of Variables

STUDENT 'Student Number'
 AGE 'Age of student at start of course'
 PREVED 'Previous education'
 ATTEND 'Number of classes attended, n=21'
 COMPLTE 'Course completion by student'
 PA1 'Perceived Ability -- needs improvement'
 PA2 'Perceived Ability -- finds it difficult to write'
 PA3 'Perceived Ability -- poor skills'
 PA4 'Perceived Ability -- writes well'
 PA5 'Perceived Ability -- ESL'
 PA6 'Perceived Ability -- needs help with grammar'
 PA7 'Perceived Ability -- needs help with sentence structure'
 PA8 'Perceived Ability -- needs some help to hone skills'
 PA9 'Perceived Ability -- poor reading comprehension'
 PRE_DR 'pre course score on direct request'
 PRE_BAD 'pre course score on bad news'
 PRE_PER 'pre course score on persuasive'
 PRE_PRO 'pre course score on proposal'
 PRE_TOT 'pre course total score'
 POS_DR 'post course score on direct request'
 POS_BAD 'post course score on bad news'
 POS_PER 'post course score on persuasive'
 POS_PRO 'post course score on proposal'
 POS_TOT 'post course total score'.

VALUE LABELS

PREVED 0 'Less than High school' 1 'High School Grad' 2 'ABE Upgrading'
 COMPLTE PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 1 'Yes' 2 'Withdrew'
 PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 1 'Yes' 2 'Not Indicated'.