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Writing apprehension and the computer classroom

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WRITING APPREHENSION
AND THE COMPUTER CLASSROOM

by

Jennifer Alarid

A thesis submitted in partial fulfillment
of the requirement for the degree of

Master of Arts

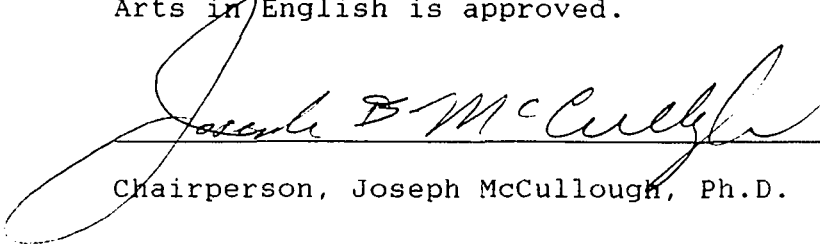
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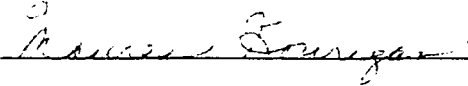
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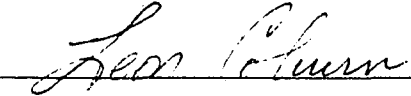
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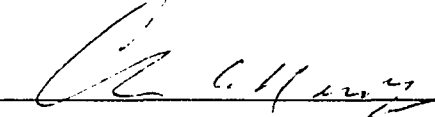
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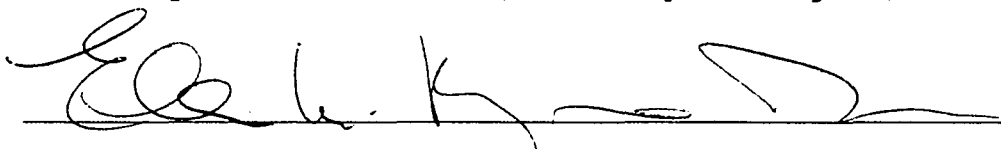
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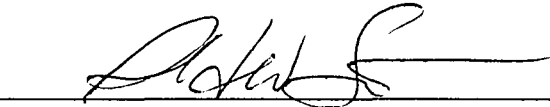
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ABSTRACT

This study was undertaken to determine if computers affect writing apprehension. Both experimental and clinical methodologies were employed in the form of surveys and interviews, respectively. The results indicate that computers have no measurable effect on students' writing apprehension.

Instructors' backgrounds are examined, followed by their perceptions of writing apprehension and computers. The students' experiences with computers and composition and their perceptions of writing apprehension and computers are also examined. Significant variations in experience and backgrounds brought to the classroom by both instructors and students indicate that writing apprehension is as individual as are students who experience it. These same results also indicate that instructors who must deal with writing apprehension cannot be expected to do so if they are unaware of its existence.

This study concludes with a call for further research, particularly research which addresses the significance of the instructor to writing apprehensive students, computers or no.

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CHAPTER 1

INTRODUCTION

The increasing popularity of computers with the general public in the last two decades is evident throughout society. Thanks to computers, the weekly payroll that once took hours to complete can now be finished in a fraction of the time by plugging the right numbers into a computer program designed for the purpose. Similarly, many writers have also discovered that writing on the computer can be timesaving, particularly where revising is involved. It is much more convenient to make a change on the first page of a twenty-page paper and print it out again than it is to have to retype the entire document. As the advantages computers had to offer became more apparent to the public, so too did they become apparent to educators. In her chapter, "Beginning Writers and Word Processing: What We Know and Need to Know," Cochran-Smith succinctly describes the evolution of computers from the scientific world to the typical writing classroom:

In her study of the cultural impact of computers, Turkle (1984) points out that even at the end of the 1970s, intense involvement with computer technology was largely limited to the subcultures

of computer programmers and those members of the scientific community who were exploring the realms of artificial intelligence. By the mid-1980s, however, involvement with computers had become a popular phenomenon, and our culture had become one in which everyone was invited and even required to interact with the technology. Within this climate of intensifying and widespread public involvement with computers, there was a tremendous upsurge in the number of computers available for classroom use at all levels. In 1981, for example, fewer than one school in five had a computer. Today almost all do (U.S. Congress Office of Technology Report, 1988), and it is not unusual for elementary schools to have one computer per grade level and, in many cases, per classroom (25).

A substantial increase in computer usage at the university level during this time period, then, comes as no surprise. The progression of computers into the `everyday world of writers, according to Cochran-Smith, was largely due to the written reactions of professional writers to writing on computers: "...professional writers found that word processing was a highly effective writing tool, and some were eager to describe their experiences and speculate about the benefits of word processing for others" (26). Educators and instructors were among those affected by these accounts:

The public accounts of professional writers provided interesting metacognitive glimpses--windows into some of the insights of those who spent a good deal of time both writing and thinking about writing. They touched on what was involved in the conversion from competent composing with pencil or typewriter to composing with word processing, a topic which, during the early part of the decade, was of widespread interest to other writers but also especially interesting to educators and classroom researchers. The writers expressed initial concerns about overcoming the "humanist's bias" (Zissner, 1983, p. 21) against computer technology in general, adjusting to the abstract "paperless-ness" of word processing, and learning to delay editing impulses while discovering what they had to say through a speedily produced first draft. They commented on the advantages of the impermanent and easily revisable text of the computer screen, ways of adjusting to the word processor's light keyboard touch and rapid speed, and the thrill of emancipation from recopying, retyping, cutting, and pasting. The verdict in the commentaries of the professionals was unequivocal enthusiasm--word processing was a boon for writers!

The study which follows was undertaken in this same spirit. If computers are indeed such a boon to writers in so many other areas, could they not also be effective in helping students deal with writing apprehension? What this researcher came to discover was that, as effective as they may be as writing tools for those concerned primarily with revision, mechanics, and editing, computers are neither boon nor bother to those dealing with writing apprehension. More importantly, this study shows that instructors need to be made aware of writing apprehension--how important a factor it can be to freshman English students and how unique are its manifestations in each individual.

CHAPTER 2

REVIEW

An extensive survey of the literature in the area reveals that fewer than twenty studies conducted between 1975 and 1992 deal with writing apprehension and computer usage specifically. These include articles such as "Word Processing: A Motivational Force in Developmental English: A Comparison of Two Developmental English Classes" by Lucille Deutsch; "A Questionnaire to Evaluate Student Attitude" by Susan G. Feinberg; "Writing Anxiety: Reasons and Reduction Techniques" by Helen R. Heaton and Pauline M. Pray; and "Teaching Teachers to Use Computers as Writing Tools" by Andrea W. Herrmann. Ruth J. Kurth has also contributed to the research with her article "Word Processing and Composition Revision Strategies"; as have Deborah T. Meem with "The Effect of Classroom Computer Use on College Basic Writers: A Controlled Study in Progress"; and Lynne Outhred with "To Write or Not to Write: Does Using a Word Processor Assist Reluctant Writers?" Additionally, studies conducted by Marianne Phinney, W. Michael Reed, and Mimi Schwartz deal with writing apprehension and computer usage to at least some degree, as do those by Milton Teichman, Milton Teichman and Marilyn Poris, and Iris I. Varner and Patricia Marcum Grogg. Still, the area has not attracted

overwhelming attention, not when the use of computers continues to increase.

Beyond the fact that the research is minimal, some of the articles which do deal with writing apprehension and computer use target too narrow an audience to be of great value to most other researchers. Feinberg's study, for instance, focuses on whether or not using computers diminishes writing apprehension in technical writers. She goes so far as to design and include a writing apprehension questionnaire specifically geared for technical writers. Marianne Phinney addresses the phenomenon of writing apprehension as it applies to first and second language writers. Groups as specific as these are not representative examples of most first-year college writers and their writing classes.

Other articles, such as Outhred's, are simply misleading. While the title indicates that this article could be significant in an investigation of the effect of computers on writing apprehension, closer scrutiny reveals that the targeted group is not college freshmen. This study involved developmentally disabled youngsters ranging in age from eight to twelve. Studies such as these are of value to those who are interested in the particular groups involved, but not to most freshman composition instructors. Little research exists in the area of writing apprehension and computer usage among typical college freshmen.

Because a certain lack of interest prevails among many

composition scholars, writing apprehension as an area of study often becomes secondary to other concerns. For instance, Herrmann's article mentions writing apprehension in passing but is more concerned with developing computer literate instructors. Also, Kurth's article, "Word Processing and Composition Revision Strategies" obviously focuses on revision concerns; in it she does make note of differences in students' levels of writing apprehension (expressed as attitudes), but only as a side issue. The same can be said of the article by Meem. The purpose of her study was "to test the effect of composing and revising at a computer on the writing performance of developmental English students" (1). Meem's tentative results from this study indicated "that computer use may affect students' attitude more than their writing performance" (1). Here again, the researcher addressed apprehension (attitudes), but only as an ancillary issue. Furthermore, in her article, "Computers and the Teaching of Writing," Mimi Schwartz states that using a computer to write can "reduce initial fears of making mistakes" (28). She also mentions one student's positive attitudinal reaction to using computers but goes no further.

Milton Teichman and Marilyn Poris's study, "Initial Effects of Word Processing on Writing Quality and Writing Anxiety of Freshman Writers" at least gives equal time to both writing apprehension and to quality. As with many other research projects, however, this study still associates

writing apprehension with another area. This "research by association" wherein writing apprehension is addressed only as an afterthought or where it is of secondary concern to another area is all too common.

Several possible factors underlie this paucity of research. For one thing, using computers as writing tools in the classroom is a fairly contemporary development. The great majority of colleges and universities have been doing so for less than twenty-five years. It follows that research in the area is relatively recent as well. In addition, while writing apprehension is not itself a new development, research exploring that area of the writing process is. Daly and Miller's Writing Apprehension Test, the standard instrument of measurement for studies in this area, was not developed until 1975, making it available to researchers for less than twenty years.

Other aspects of the writing process are of greater importance to many researchers which may be another reason for the lack of research in the specific area of writing apprehension and computer usage. Invention problems and techniques, the benefits of sentence combining, and strategies for effective revision are areas of interest not uncommon to researchers as the textbooks students use daily (in a perfect world) in freshman composition courses demonstrate. The studies on revision alone number in the hundreds. The cognitive bent of the 1970s and early '80s accounts for much

of this focus, but that school of thought has been losing its foothold.

Whether it is due to differences in methodology, unintentional biases, or any of a number of other variables, the results of the research that already exists in the area of writing apprehension and computers vary greatly. Rather than reaching any consensus about whether or not writing apprehension is affected by computer usage, the conclusions cover the spectrum. Some of the studies conclude that computer usage greatly reduces students' writing apprehension. For example, Teichman's "Wordprocessing in the Classroom: Its Effects on Freshman Writers" claims that apprehension is diminished through the use of the computer. In direct polarity, other studies indicate that apprehension increases with the use of computers. Meem's article, for instance, concludes that not only is writing apprehension not diminished, it actually escalates at times. The results of yet other studies, such as Varner and Grogg's "Microcomputers and the Writing Process" and Deutsch's article indicate that the use of computers has absolutely no effect on writing apprehension. One good thing about this lack of agreement is that it indicates that there is, as yet, no definitive answer. With this much contradiction, no one researcher's results can be considered conclusive. This lack of agreement means that there is room for further attempts at elucidation. So little research has been done, it only makes sense that the greater the number of

studies undertaken to explore the area, the more likely it is that some sort of consensus will eventually emerge.

Definition

If computers are going to continue to be used in the writing classroom, as seems likely, it is important to know as much as possible about their value and/or shortcomings. Writing apprehension is an issue with which many students must deal, whether or not computers are involved. As the study conducted here reveals, the connection between the two is tenuous at best. Writing apprehension emerges as the more important issue for three reasons: one, there is little understanding of what it is to begin with; two, there is insufficient awareness of its existence, much less its causes and effects; and three, instructors who encounter the phenomenon in their students need to be able to identify it before they can deal with it.

The lack of understanding is fundamentally due to the lack of an accepted definition of the problem. Unlike other areas of interest in composition, writing apprehension has never clearly been defined, nor is it self-explanatory. Even among the sparse number of studies concerning writing apprehension which do exist, the meaning of the term seems to be inwardly understood by the investigator but never fully defined externally. This lack of definition may well be a major reason that these studies conclude with widely differing results. Until there is a clear definition upon which all can

agree, one might as well assume that each researcher is talking about something completely different.

Most studies in the area of writing apprehension use a common instrument, Daly and Miller's WAT, to determine the presence of writing apprehension in students. Based on this fact, some common ground can be determined. One can deduce that writing apprehension has something to do with fear (see Appendix A, WAT questions #2, 4, and 5). Feelings of nervousness also seem to be associated with writing apprehension (#13), as does a general lack of confidence in writing ability (#16, 18, 22, 24, and 26). Still, while the WAT may imply certain parameters of writing apprehension, it does not offer an explicit definition. For the purposes of promoting a greater understanding, then, the following definition is offered: Writing apprehension is an emotional condition based in fear, often resulting in a nervous, insecure state which may interfere with the transfer of thought into written words; it may at times manifest itself as writer's block, but the two terms are not the same.

Writer's block is a phenomenon which generally occurs at the beginning of the writing process and frequently stalls the process indefinitely. Few writers, it is likely, have not had at least a degree of the sensation of writer's block. Given a work of sufficient length, this sensation can recur several times, especially where major divisions, such as chapters, are involved. The causes of this occurrence vary with the

individual and the task at hand; the results, however, are always the same: the page remains blank, the work stalled. Such blocks can be overcome in many ways. Donald Murray offers writers "Twenty-six Ways to Defeat Writer's Block" (177-82). He claims that

writer's block is a convenient thing to say to someone who wouldn't understand planning activities or the necessary rehearsal that precedes writing. It's also a convenient term to use when you haven't gotten yourself into the chair and waited for writing (203).

While many might not agree with such a definition, most would agree that writer's block is a significant area of concern to writers. It is, however, only one facet of the multi-dimensional area of writing apprehension. Unfortunately, because the term "writing apprehension" is unfamiliar, most students and instructors tend to believe it to be the same as writer's block, particularly when informed that writer's block may be one of the forms writing apprehension can take. The two are related but quite different phenomena, and care must be taken in making the distinction.

General apprehension is something that everyone experiences to some extent given any new situation, whether it be starting a new job or going on a blind date. It is only natural that people feel some apprehension when faced with the unknown. Instructors of composition are faced with this

student problem in the classroom all the time, whether they realize it or not. Most students have some degree of writing apprehension, for instance, when faced with learning a new pattern of development, be it definition, comparison, argumentation, or any other mode of composition. One apprehension that students deal with all the time is the required length of the assignment. Instructors usually deal with these sorts of apprehensions by knowing their subject and imparting their knowledge, and they are frequently successful at putting students more at ease. These instructors, however, may not always realize that writing apprehension is what they are dealing with.

Because of the lack of an accepted definition, many instructors are unaware that writing apprehension exists, much less the reasons why it affects their students. There are many causes for writing apprehension, ranging from the superficial to the profoundly debilitating. Poor handwriting, for instance, is a superficial motivation which can cause students to be apprehensive about writing. They may be so preoccupied with how the written product appears that they will suffer in the writing of it. Another possible cause for apprehension in some composition students lies in their lack of skill in mechanical areas. Those who feel that their vocabulary is limited, for example, or who know that they are poor spellers, may also be stymied when faced with a composition assignment.

On the more severe end of the scale, some students become

engrossed in what someone else might think of them personally when reading their product. The WAT deals with this aspect in questions #4, 9, 12, 14, 20, and 25, all of which deal with students' perceptions of their audience's reception of their work. Fear of others' opinions can be a much greater handicap to students than the superficial appearance of the product, a problem which can be easily handled by a good typewriter. People who write often think of the task as a life-giving experience, similar in ways to giving birth. Hence, they tend to feel a nearly maternal, protective instinct towards their product. Writing itself is an internal, highly personal activity, and as such the apprehension associated with it is likely to be of great intensity to the person suffering. In turn, this emotionally-based condition often results in many other effects down the line, even in the simplest cases.

Most importantly, instructors cannot be expected to help their students deal with writing apprehension if they do not know what it is, what may cause it, or the extent to which it may affect their students. No matter the problem, if instructors are not sure of what to look for or how to identify students who need assistance, those students very likely will not get the help they need. Because writing apprehension is as predominant as it is nebulous, composition instructors need to be all the more aware of what it is so that they can treat it. After all, no one can effect a cure if the disease itself is undiagnosed.

CHAPTER 3

DESIGN

Methodology

No matter the predominant methodological trend in composition research, writing apprehension simply does not have the same high profile appeal to many researchers as do other areas. Many of these high profile areas, such as revision, deal not only with the existence of a problem, but also with its causes and remedies. It is exciting to assert that "a problem exists, this is why, and here is the way to treat it." Writing apprehension, on the other hand, lacks the high-profile appeal because it is still in the stage of being discovered as important. Hence, research in the area tends to be geared towards providing evidence of its existence and postulating its importance. Rarely does research get into the reasons for the existence of writing apprehension, much less the "problem-solving" realm.

Even testing in order to prove, evidentially, that such a phenomenon exists and is important has its problems. So far, investigations into the area have been limited to an experimental methodology. North defines experimental knowledge as "...paradigmatic in that its form corresponds to--is

patterned after or, perhaps more precisely, is assumed to constitute the pattern of--that portion of the orderly and accessible world under study" (147). However, according to North, experimental research

...is equipped for certification, not discovery, bad news in a field like Composition, where celebrity has so far tended to accrue to 'discoverers'--inquirers whose perspectives depart fairly radically from convention, pretty much regardless of the kinds of evidence supporting their claims (145).

Short of hooking students up to devices which measure external signs of internal apprehension levels by measuring heart rate, perspiration levels, and so forth, there is no way to demonstrate conclusively that writing apprehension exists.

Problems with the methodology may be another possible cause for the lack of research on this subject. Most of the studies which examine this issue are experimental in nature. This should not come as a surprise since, as North states, in examining "studies conducted between 1963 and 1985...one can figure on upwards of 1500 Experimental studies--more than that produced by all the other Researcher methods [clinical, formalist, and ethnographic] combined" (142). This predominance of experimental research exists primarily because of the cognitivist bent of the field at that time. North further asserts that "Testing and assessment in writing...has

mostly been controlled by Experimentalists" and confirms, more specifically, that "There is an almost independent literature on writing anxiety, much of it framed in Experimental terms" (144).

Conducting experimental research is never easy, partly because of the enormous number of variables for which a researcher must account. Additionally, even as scientifically-minded as most researchers attempt to be, very few can keep their biases from affecting how they go about looking for answers or what conclusions they eventually do reach. Without consciously meaning to, all are capable of tainting the scientific purity of the research. North implies, however, that total regulation is not really possible and that "there is always considerable risk of making a mockery of the method by pretending that such inquiry has been fully controlled" (143). Clearly, when something as subjective as humans and their attitudes and apprehensions are involved, the variables are apt to be innumerable.

Another difficulty in conducting experimental research in the area of writing apprehension is addressed by Reed in his article "Daly and Miller's Writing Apprehension Test and Hunt's T-Unit Analyses: Two Measurement Precautions in Writing Research." Reed finds that Daly and Miller's Writing Apprehension Test (WAT), the instrument of choice for many of those who conduct research in the area of writing apprehension, "may inaccurately reflect [a writer's] degree of

writing apprehension" because of the inclusion of the "uncertain" response (1). (A version of this instrument can be found in Appendix A.) He contends, quite convincingly, that such a response is appropriate for a survey of factual information but is inappropriate for a survey of attitudes (5). Reed details his concern as follows:

It is possible, for example, that a survey on foreign policy would include some statement that some people would not be able to respond to. The WAT, however, does not fit into the same category as these other, factual instruments. Because this instrument ostensibly measures attitudes towards writing, the statements do not relate to factual knowledge or an activity that most people have not experienced (5).

Because data collected from this sort of survey are based on the subjective responses of participating individuals, the data themselves are bound to be subjective. Scientific accuracy--the ideal for which experimental studies strive--cannot, therefore, be sustained by a survey based in subjectivity.

It is true that experimental studies of a strictly scientific nature can be revealing. Even in composition, experimentalist undertakings have their value and are used extensively. Composition, however, is a field wherein humans attempt to teach others how to better master a process as

ambiguous as writing. David Foster discusses this phenomenon in terms of what he calls "open" and "closed capacities." In his view, "closed capacities" are finite; they have limits which can be mastered. "Open capacities," on the other hand, are infinite and "are never fully mastered" (7). They are not exclusive, however. Frequently "open" and "closed capacities" work hand in hand. A study which employs statistical data, for instance, is relying upon a "closed capacity." The task of interpreting that data, though, and drawing conclusions from it is an "open capacity" and would not be possible were it not for having the "closed capacity" data to draw upon. Another example of how these two work together can be found in composition. As Foster himself points out, writing is an "open capacity." The "closed capacity" of such attainable skills as punctuation and grammar enable the "open capacity" activity to take place. The experimental studies can show increases/decreases in closed capacities. Writing apprehension, however, deals with the "open" nature of writing. Hence, this study employs not only a "closed capacity" experimental methodology but also a clinical methodology which is better designed to handle the "open capacity" of writing apprehension.

Scientific accuracy in research about writing cannot be attained by such means as multiple choice instruments, even though some measurable skills are involved. And while a researcher dealing with the effect of computers on the

revision process, for instance, can cite hard facts in terms of word count, T-unit length, and the number of changes made as evidence, one dealing with apprehension must rely on the subjects' own views of how they feel and to what degree such feeling has changed, if any, in the specified time. So while scientific accuracy is the preferred goal of experimental research, research should not be limited exclusively to such a methodology. One lives and studies in a subjective world; it is only natural, therefore, that research based on subjective responses must be important. Even if such research does not meet approved standards for scientific accuracy or significance, it is still of value in The Making of Knowledge in Composition. As North puts it,

...the object of Experimental inquiry is to make paradigmatic inference possible. The role of design, then, including this business of collecting and analyzing data, is to set things up in a way that maximizes that inferential power for any given study. There will always be limits on that power, but from an Experimental perspective any contribution that can make paradigmatic sense is welcome...(177).

The primary goal of this study is to be a part of accumulating, bit by bit, information that will later contribute to understanding.

Experimental methods are one way of making a

contribution, but other methods are also significant. North breaks down inquiries into composition into four major modes: experimental which discovers "general 'laws,'" clinical which focuses on individual cases, formal which builds models or simulations, and ethnography which makes stories or fictions, provides narrative accounts (137). Each of these research methodologies serves as a different way of "making knowledge."

That research of a strictly experimental nature is of value cannot be disputed. Such studies have contributed much to the body of knowledge which currently exists in the field of composition. There are limitations to such research, however. As North says, "The Experimentalist's goal is to put together the best design possible under the circumstances. The community asks, and the investigator can deliver, no more" (177). Nor, by extension, should the investigator ask more of him- or herself than what is possible and realistic. This study was designed to take into account such variables as might be overlooked in a strictly experimental endeavor. It is an effort through experimental and clinical methodologies at both a macro- and a micro-analyses of the area in question.

The widely varying results of the existing studies are due in part to the context in which they have taken place. No one study in this area has addressed the importance of the variables imparted by the students or those originating with the instructors. Surveys may indicate that students do suffer from writing apprehension, for instance, but they do not get

into the background of the student who may well have a pre-existing tendency towards this problem. Similarly, the backgrounds of the instructors are generally overlooked when determining to what degree, if any, writing apprehension is reduced in students (whether or not computers are involved). Obviously, if one were to take all variables into account, the resulting study would be book length if it were at all manageable. Some important differences, such as the backgrounds brought to the classroom by both the instructors and the students, have been papered over in the past. The present study addresses rather than dismisses those variables.

Objective

While trying to remain as open-minded as possible, this investigator expected that the results of her study would reveal that the use of computers played a role, even if minor, in reducing students' levels of writing apprehension. One would think that, if nothing else, students might experience a reduction in apprehension because of the appearance of the finished written product. Students who are normally uncomfortable with their handwriting might be less apprehensive if assured that their creation was going to be legible. One might also assume that tools such as a spell checker, a thesaurus, and a style checker might reduce writing apprehension in a student who is all too aware of his or her own shortcomings in mechanics and/or grammar.

Perhaps of greater import is the lingering expectation

that students would be less daunted by writing given that global revision is ostensibly easier to effect on a computer than it is with handwritten material. Computer advocates claim that the "cut and paste" feature makes the sometimes enormous task of revision much more tolerable. It would follow that students who otherwise dreaded this part of the writing process would be more confident. No matter what the expected answer to the research question, however, it is not always borne out by fact. In the case of this study, the actual results did not fully bear out all the aspects of the initial assumption.

Instruments

The study delineated herein, as were most others in the area of writing apprehension, was based originally in experimental methodology. Unlike other research, elements of clinical methodology were employed as well. Pre- and post-test surveys were given to students in three computer-based composition classes. Based on the results from the surveys, six students were interviewed at the close of the study. The three participating instructors were also interviewed. The two different survey instruments which were used have both been employed previously in similar studies. The first of these is Daly and Miller's Writing Apprehension Test (WAT). This questionnaire asks students to respond, based on their own perceptions of their writing and their feelings about writing, to twenty-six statements designed to determine whether they

suffer from writing apprehension in any degree. The WAT is a standard instrument of measurement in the area of writing apprehension and has been since its inception in 1975. In an effort to improve the validity of the instrument, however, and in light of Reed's persuasive argument, the WAT was modified for this study by removal of the "not certain" response. Thus the participating students were left with four possible areas of response to each statement (strongly agree, agree, disagree, strongly disagree), forcing them to make a choice as to how they felt about each statement rather than allowing them to proclaim themselves uncertain. (A few participating students found a way around this; they circled the numbers corresponding to two different responses rather than limiting themselves to one. This uncertainty, however, did not seem to have a major effect on the results of the survey as a whole.)

The other survey instrument used in this study is a version of Spielberger's Self-evaluation Questionnaire modified by Reed to be geared towards computer anxiety. Much like the WAT, this instrument seeks students' responses to twenty statements in an effort to determine whether or not they are apprehensive about the use of computers. Students were given the same four possible areas of response as in the WAT from which to choose. This instrument, while not dealing directly with writing apprehension, was employed in an effort to distinguish between the fear of writing and the fear of computers. After all, if students are asked to write on the

computer, it is possible that their fear of the machine could be mistakenly perceived as a fear of writing itself. Each of the aforementioned survey instruments was administered as a pre-test at the beginning of the 1993 Fall Semester and then again as a post-test at the end of the same semester in an attempt to determine the effect of the use of computers on writing apprehension. (These instruments can be found in appendix A). Thirty-four students from the three classes responded to the pre-test. Nineteen of these also responded to the post-test survey.

In addition, to further augment what might otherwise be seen as strictly statistical data, six students were interviewed at the end of the semester to see if the overall results gathered from the questionnaires were sustained on an individual level. The purpose of this use of clinical methodology was to deal with some of those variables heretofore neglected elsewhere, not the least of which was the positive/negative writing experiences the students brought with them to the study. Unlike many empirical studies which tend to isolate the variables without seeing their intersection, this one made use of individual interviews in an effort to focus more in depth on a major source of variables otherwise unaccounted for. These variable include everything from how students perceive their own handwriting to whether or not their previous writing/computer experiences have been negative--factors which would likely contribute to writing

apprehension. These interviews were conducted after the post-test questionnaire had been administered. Each of the six students who agreed to participate in this portion of the study was asked the same questions, and all but one of the interviews were recorded on audio tape.

The participating instructors were also interviewed after the conclusion of the semester in an attempt to determine how individual instructor's techniques may have influenced results. Each instructor was asked the same questions as the others, and each of these interviews was also recorded on audio tape. By conducting these inquiries, the variable of instructors' backgrounds was taken into account, a factor previously dismissed by others.

Participants

The subjects chosen for this study were students of English 101 at the University of Nevada, Las Vegas. They should be considered representative of students just beginning their English studies (for credit) at the university level. They were not chosen on the basis of their IQ. In fact, the only prerequisite for their participation was that they either scored a minimum of 21 on the ACT English or 475 on the SAT verbal or that they had previously successfully completed a semester of English A, a remedial English course. This was only a consideration because such scores or experience is a standing prerequisite for any student taking English 101 at UNLV. Of greater importance than any imposed criteria was that

these students randomly selected these classes on their own.

The three instructors who agreed to allow their classes to participate, conversely, were chosen based on a number of criteria, primarily designed to minimize variables. The first of the deciding factors involved status within the university. Because they are frequently the ones to whom much of English 101 instruction is ascribed (over forty percent), these three were all graduate assistants. Furthermore, the fact that each taught a section of English 101 in the computer laboratory was a major component in their selection. Also, each instructor chosen is female. While seemingly minor, this element was intended as an attempt to eliminate the variable of gender from the study. Additionally, although not a factor in selection, the participating instructors were not informed of the specific nature of the study beforehand, in an effort to keep researcher interference to a minimum.

Initially, the element of selection included that the instructors not only taught a class in the computer lab, but that each also taught a similar section in the traditional, non-computer classroom. The intention was that the pre- and post-test survey results from each instructor's computer-based class were to be compared to the results from each one's traditional class which, in turn, was given the same syllabus from which to operate as the computer class. Due to a flaw in communication at the beginning of the study, however, none of the three instructors administered the pre-test survey to the

students in their traditional classes, thereby making such a direct comparison virtually impossible. Had the study been conducted as originally conceived, however, the discovery of the importance of the instructors as a variable may never have emerged since the instructor interviews were conducted as a last-minute effort to compensate for the lack of class-to-class comparison.

Environment

Because each of the three participating classes was comprised of English 101 students and because each class was based in the computer laboratory, some interesting similarities were involved. The similarities of the environment are important because it is common ground and eliminates one more variable. Many students who enroll for English 101 in the computer lab, for instance, do not realize that the class is actually held in the lab. According to Ms. RB, for instance, "at least two or three were shocked that it was" a computer-based English class. "I had two or three students," she said, who "deliberately sign up because they knew, and two or three that were clueless and shocked."

Ms. EB also had her suspicions:

I think there were some who didn't know....it seems to me that there were some comments by people coming in...[such as] "Is this English 101?" which may have been...just a natural thing, "the first day of class I want to make sure I'm in the right

class" type of thing, but it also could've been the surprise of them not expecting to have computers in the classroom.

Additionally, Ms. RF seemed convinced that this was the case. She was definite in this belief: "...certainly there were some that left that first day because of that, that didn't realize they had signed up for computer lab." Of the six students interviewed, furthermore, four admitted that they had not realized when they signed up for it that theirs was a computer-based English class.

Common belief is that this is because many students do not read the class schedule carefully. Ms. RB put it very succinctly when she said, "They didn't read it; they didn't know." In her interview, Ms. EB concurred, saying that "I think there were some who just signed up for a section without reading the fine print."

There is always a footnote in the schedule informing students that the class is to be held in a computer laboratory. Many of the students entering the classroom on the first day, however, are surprised to find computers before them. It is not unusual to find students going back out into the hall on the first day of class to check the room number over the door, certain that they have wandered into the wrong classroom.

The attrition rate for sections of English 101 in the computer lab is partly a consequence of this lack of student awareness. Ms. RB said, "I started out with about eighteen,

and I ended up with ten. I'd say about five of those dropped the first week, and three dropped...two or three weeks later." Similarly, Ms. EB's class "started off with twenty students, and by the end of the semester it dropped to...twelve." In Ms. RF's section, additionally, "...there was a high attrition rate. There were a number that were lost the first week." Based on the number of students responding to the pre- and post-test surveys alone, fifteen of the original thirty-five participating students dropped. Even so, a high attrition rate cannot be blamed solely on the students' astonishment at finding themselves in a computer lab. As simple a factor as time of day often plays a part. Ms. RB's class, for example, "was at seven-thirty in the morning, which didn't help."

Another area of student ignorance which often contributes to the attrition rate is the prerequisite for the class. While it, too, is mentioned in the schedule, students are frequently oblivious to its existence. In Ms. EB's class, therefore, "Some...[dropped] at the very beginning of the semester because they didn't have the prerequisite ACT or SAT scores." Then, of course, there are always factors such as absenteeism to consider. Again, in Ms. EB's case, "a couple of others...[had] personal problems, new jobs or illnesses or accidents; they just missed too much and dropped." Many students who drop the course later in the term, moreover, do it for reasons other than because it is a computer lab. As Ms. RF observed, "I know there were several that dropped

it...midterm. They weren't happy with their grades." Again later, she reiterates this point: "[As] far as the ones that left later in the semester, I don't think that a major contributing factor was the computers. I think that was primarily the usual grading problems." It is reasonable to assume that some of this attrition is because students are caught unaware of and unprepared for computers. Although one might expect the attrition rate of computer lab classes to be higher than that of traditional classes, the average at this university is about the same for each. Aside from computer anxiety itself, English 101 students drop for the same reasons--whether those reasons be time restrictions, course prerequisites, dissatisfaction with grades, or initial instructor contact, course requirements, or writing apprehension.

Classes held in the lab face another similar problem. There are twenty-four student terminals available in the lab, only sixteen of which are networked. It is rare that all twenty-four computers are ever working at the same time. A non-working computer or network, or the fear of it, might be cause enough to create anxiety in students, especially if the instructor does not know how to fix the problem. Instructor apprehension can easily lead to student apprehension. More importantly, students who are anxious about the writing tools they are given may experience greater apprehension about writing as a result. Between problems with the network, the

printers, and the computers themselves, it is safe to assume that four of the computers will be off line on any given day. Because of this, there is an enrollment cap of twenty students in these classes. (The limit for sections taught in the traditional classroom is twenty-five.) If one has a full class of twenty students and the computers are not cooperating, some students may be left without a terminal on which to work. Problems with writing tools cannot be beneficial to students, particularly those who are already apprehensive about writing.

Another similarity shared by the participating classes is the configuration of the lab itself. Most would agree that it is not the best arrangement for classroom instruction, particularly if one is attempting to address writing apprehension through interaction. The twenty-four available computers are arranged in groups of four, each two facing the other two, which run along the two sides of the classroom. What this essentially means is that half of the students at the computer are facing the back of the classroom rather than the front. This is a factor when the instructor is lecturing or demonstrating something to the class on the blackboard or the overhead projector. Two of the three instructors mentioned their concerns with the physical layout of the lab. When asked if she would consider teaching in the computer lab again, Ms. RB admitted that "The classroom rapport isn't very good because they have this machine in front of them, and they want to interact with the machine and not with me. The classroom

set up is so that people have their backs to you sometimes." Ms. EB also considered the configuration a "negative," saying, "I don't like the set up of the classroom. When we're not using the computer, it's very hard to teach because there [are] the monitors in the way." Of her traditional class she said "it's been easy to kind of get this feeling of unity that we are a class, and with [the computer lab] class I don't feel that it ever really quite clicked." She did, however, try to work around the problem: "...a lot of times...if I knew we were going to be having a class discussion, I would just have them move all their chairs into the middle aisle...make a circle...otherwise it was just too easy for students to try and hide behind their monitors." Student-teacher interaction is undoubtedly a factor in reducing writing apprehension levels, one that is only complicated by a lab configuration such as this.

Unless they turn their seats around, the students who are facing the back of the room cannot see the instructor or that to which he or she is referring. Further, if they do turn around, they are left without the use of the computer, and some students typically employ it when taking class notes. If they do not turn around, on the other hand, the instructor at the head of the classroom cannot see their faces. This is a significant factor because an instructor needs the visual feedback of his or her students' expressions to ascertain whether the point being made is getting through to them or

not. Without this input, the instructor may not realize that he or she is not being understood by a large portion of the class and may be oblivious to the fact that some of the students need the help to meet and defeat writing apprehension.

More frequently, however, this configuration affects the participation level of the class. This is particularly true when an instructor has the students participate in any group work, such as invention exercises, collaboration, or peer revision. In Ms. RB's class, for instance, the physical layout of the room "lends itself into dividing people into work groups of four or five. They'll talk within the group, [but] they won't talk in the class as a whole."

Ms. EB agrees that it is a problem that affects the entire class. She reported, "I don't think I had any problem in my class with kids playing solitaire or anything like that, but they just didn't participate; they felt like they were safe." Later on in her interview, she also said that "...participation was very difficult...even when I did get them all in the middle. They were kind of timid. I mean, they were very respectful and listening, but it was like nobody wanted to say anything." Much the same as the attrition rate, not all of this can be exclusively attributed to the presence of the computers. Problems with class participation are a glaring example of how writing apprehension can affect students not only as individuals but as a group. Even when the

configuration of the lab is taken out of play, as with Ms. EB's class, the apprehension is obviously still there, whether caused by fear of the instructor, fear of being "wrong," or fear of what other students will think. It is, however, interesting that all three instructors complained about the lack of participation in their computer lab classes. In Ms. RF's interview, the criticism came out when she was discussing how she would rate the class on a scale of one to ten. Her reply was,

maybe three...that was the class I had a lot of difficulty with as far as participation, [oral] participation...We just never, for some reason, just didn't come together as far as trying to get class participation. So it made it difficult to go anywhere. I mean, the only way I could get people to say anything was to specifically direct a question to them, and that [their response] was very short. Even as groups: the groups didn't mix; the groups didn't talk to each other. It wasn't just participating when we had to talk in front of the class...the groups together did very little participation. Trying to do brainstorming would take two minutes, and then they'd be out of things to say. They just didn't talk to each other.

This apprehension, however, is not limited to the computer lab.

One problem that can be attributed solely to the computer lab is that the computers physically get in the way of student interaction. Because there is a terminal in front of each student, students cannot easily see those whom they face. What generally happens in this case is that rather than working together as the group of four designated by the blocks of computers, those students with their backs towards each other will turn around to work with each other as a group. Again, this takes the computer itself out of play, for the most part. Of course, they could use the computer network to work as a group in the blocks as they are established, but this takes personal contact out of the picture, and the network does not always work well enough to allow such computer-based interaction. In fact, the network was not operational at all that semester. Interaction, be it student-teacher or student-student, is an important component when dealing with fears--writing apprehension particularly.

While there are obviously some similarities that each English class held in the computer lab is bound to share which are significant not only because they eliminate a variable, but also because they may affect writing apprehension, there are also some variations involved. These differences may also influence writing apprehension. Most of them center around the instructor. Although the three instructors employed in this study used the same text and similar syllabi, they did not give the same types of assignments to their classes. For

example, Ms. RF, one of the instructors, gave her computer lab students their assignments on disk; the other two instructors did not. Differences, of course, could be extended to any classroom situation. Where there are different instructors, there are bound to be some differences in the kinds of tasks they assign. Part of the importance of this variation specific to the computer lab, however, lies in the instructor's requirements of the students given the presence of the computers. For instance, some instructors require that their students compose on the computer, at least when in class. Other instructors do not mind if their students write longhand, as long as the final product is entered into and printed out of a computer. Still others do not even require that it come out of a computer at all, providing it is legibly typewritten.

CHAPTER 4

RESULTS

Instructor Experience

The instructor's background is another factor in the instructor-based variations which can be found in the computer lab. An instructor who suffers from writing or computer apprehension herself may be likely to pass the fear onto her students. One who does not bear such burdens or who has experienced and conquered such concerns is apt to be of greater assistance. Instructors are different not only when it comes to experience in their chosen field (in this case, English), but also when it comes to backgrounds in computer use and/or instruction. Of the three instructors who participated in this survey, two (Ms. RB and Ms. EB) had never taught English 101 before either with or without computers. As Ms. RB put it, "I'd never taught before, never taught 101, never taught in a computer class." Both did have some previous instruction experience: Ms. RB had tutored in "places like the writing center," and Ms. EB had "taught sixth grade for a year." Each also had varying degrees of experience with computers. Ms. RB owns a computer herself that is equipped with the same word processing program used in the computer lab

(WordPerfect) and has had it for three or four years. Ms. EB, on the other hand, has had a wide variety of experience with many different computer systems including, but not limited to, word processors. As she says, however, "I hadn't had any in-depth training on any one kind." Needless to say, neither had any real experience in teaching computer use either. Even with her three or four years of familiarity with WordPerfect, Ms. RB says "[I] still don't feel comfortable enough about computers to have someone totally ignorant of them come in and have to teach and make up for it." Further, with the exception of teaching her mother, she admits "[I] never taught computers, how to use computers, wouldn't want to teach computers, but know enough to get by, I guess." Ms. EB, too, claims to have no background in teaching computer use. When asked about her experience in this area, she said

the very first day of class I told my students
"This class will not teach you how to use the
computer. It assumes that you know how to use the
computer and that you are going to be able to use
it as a tool in writing. The emphasis of this class
is to teach the writing."

Additionally, while she was marginally familiar with WordPerfect from her days as a sixth grade teacher at a school where an IBM-type computer was available, it was not of great help to her in the computer lab:

I did find that if there were problems that came up

with the computers, sometimes I could solve them, but...if the font size would change or the screen size or things like that, they were things I hadn't dealt with...I didn't have a lot of background in taking care of those.

Ms. RF, on the other hand, had already completed two full semesters of teaching English 101, including one semester of teaching in the computer lab. When asked about her experience with computers, she said, "I've been working with computers for years. I worked with them when I was at Unocal, and we've had one at home also for years," and, she continued, "WordPerfect is the same [word processing program] I have at home." Concerning her background in teaching computer use, although it did not involve word processing, she had set up some studies "using Lotus for spreadsheets and statistics" while working at Unocal which she later taught others to use. She implied, however, that the activity was of little value in teaching computer usage to an English 101 class: "[At Unocal] I would set everything up in macros, so actually all I did was show somebody how to sit down and do a series of keystrokes and numeric entries." Still, though, that experience alone is more than many English 101 computer lab instructors can claim. Moreover, she also had a previous semester's experience teaching in the computer lab itself.

Thus, while one instructor may be an expert at using and teaching the use of a program such as WordPerfect, another may

be only passingly familiar with it. While one instructor gives his or her classes computer-intensive exercises, the other may be giving his or her students the same assignments as he or she would a traditional class. So while some students emerge from a computer-based course in English 101 feeling more comfortable (or in some cases, less) after having to deal with computers virtually daily, others may get through an entire semester without having to become much more familiar with computers than they were to begin with.

The instructors involved in this study ranged from one extreme to another. Ms. RF, for instance, asserts that her students used the computers "every class period." More specifically, she says that "They used them for in-class compositions, obviously; I required that they be done on the computer," and that "we used it for brainstorming; we used it for rough drafts." In other words, Ms. RF's students were required to make extensive use of the computer.

Whether the comparative lack of experience in teaching in the computer lab was a factor or not, Ms. RB did not require that her students employ the computer on assignments to the same degree. Her class "did two or three in-class essays," and "On occasion we did journal entries, short fifteen [minute] writing[s] where they got to type on the computer." She even said that "Sometimes during peer editing, instead of handing around printed copies, they would go around with their disks and bring up their essays and try and fix them from the screen

instead of on paper," but that "Only the people that were really good with computers did that." So while her assignments were not as computer-intensive as Ms. RF's, she did make an effort at integrating the computer into the classroom. As she says, "I tried to use it as much as possible 'cause it seemed like a waste not to."

Of the three instructors, Ms. EB made the least use of the computer with her assignments. By her own admission, "We didn't really use it that much, to be real honest." Those assignments she did have her students do on the computers were fairly basic. She says she used them "mainly for...three different in-class essays...some of their...midterm...and the final." Ironically, in view of Ms. RB's statement, Ms. EB almost saw using computers as a waste: "Most of the time I didn't want to spend class time having students doing individual writing, which is the main time they would've used the computer." Moreover, given her statement that she did not want to prepare "two separate lesson plans," one for her computer class and one for her traditional class, it would be safe to assume that the majority of the assignments given in her computer class were no different from those in her traditional class.

Indeed, even the manner in which assignments are given can vary greatly. Ms. RF, on the one hand, said

I put assignments, daily assignments as well as the major paper assignments...on disk. The way I set it

up was they each had a disk which I kept. So when they came into class, they would each pick up their disk from me. Then they would also have a second disk so they could copy. So I would have a copy, and they would have a copy of the assignments...I put exercises on it...revision exercises and mechanics exercises...punctuation and all those things.

On the other hand, Ms. EB apparently did not have those capabilities. According to her,

Dr. Hourigan [Director of Freshman Composition at UNLV] said that when she was [teaching] in there, she would...collect their disks and take them home, but since I don't have a computer myself, I don't have that kind of access...and so I was somewhat limited.

She was, however, aware of this limitation, and her frustration was apparent:

...if I could say..."this lab is open...these hours...you're required to have your rough draft on your disk. I'll be collecting your disks tomorrow," you know, something like that, then I think it would be easier to integrate the computer into the class.

These differences within a computer classroom can affect not only computer apprehension but writing apprehension as

well since the computers are sometimes employed as an integral part of the writing process.

Instructor Variations

The results of this study did not convincingly support the expectation that the use of computers was effective in reducing or increasing students' levels of writing apprehension. Judging not only by the two surveys employed in this study but also by the interviews conducted, working with computers had no significant measurable effect on students' levels of writing apprehension. The three instructors, furthermore, while admitting that at least some of their students seemed to possess some degree of writing apprehension, each differed slightly in their opinions of whether or not computers had an effect.

When asked if she was aware if any of her students had problems with writing apprehension, for instance, Ms. RF believed that some did. There was one student in her class in particular who had obvious difficulty:

I can only think of one person that had real problems on the computer...and I think hers was primarily the typing problem. She just was so slow at getting it...from her brain to the keyboard, and...it created real problems for her. And, since she had real difficulty with, with focusing on a narrow topic to begin with, that created problems for her.

This one student seemed at least as apprehensive about computers as about writing. Ms. RF did admit that writing apprehension existed in her classroom "To some degree..." citing her students' "...difficulty [in] trying to, just trying to get started, get a focus, to get a direction...." Even so, she was quick to retort, "I'm not sure that I could say whether it had to do directly with the computer." Given her background with computers and her experience in the lab, the statement almost seemed defensive. Still, when asked whether or not she thought use of the computers may have alleviated any of the writing apprehension she observed in her students, her response was equally negative:

I really don't think so....I can't think of a situation where I felt that the computer specifically helped people with writer's block. I can think of people who[m] I think it helped, or [for whom it] was a positive....The people who had the ideas come fast, that were also fast, decent typists, I think it helped...because they were able to get their ideas down faster than they would have been able to hand writing. It may have been full of an incredible number of spelling errors and typing errors, but at least they got those thoughts down. But I never thought of it in terms of writer's block, and I don't really see a specific connection.

Ms. EB also noticed some evidence of writing apprehension among her students, at least at the beginning of the term: "There seemed to be some of that with the first diagnostic," she said; "I had quite a few people that got, like, one paragraph done." However, she went on to say,

that seemed to go away as we...worked through the semester because I didn't see any recurrence....I mean, there [were] obviously some people who seemed to enjoy writing more than others and feel more comfortable with it....a couple of people at the very beginning...did seem to have some problem getting started, but I didn't notice the same problems on later assignments.

Ms. EB obviously associates writing apprehension with the brevity of students' written products and with students' difficulties in beginning the writing process. Such observations may be an indication of writing apprehension, but there is certainly other evidence that can indicate a problem. These instructors, like many others, have simply never been taught what to look for.

Unlike Ms. RF, when asked if she thought the computers might have had any effect on reducing the writing apprehension she observed initially, Ms. EB was indefinite. Her response was

the two girls that I'm thinking of specifically seemed quite comfortable on the computer. I mean, I

don't remember them ever having any questions or problems with it. So,...it suggests to me that their experience with the computer was positive, but as far as being able to make any conclusions, no, I don't know.

Given that she had her students on the computer less often than any of the other instructors, only three to five times during the semester, one must wonder how accurate is her observation that their experience with the computer was positive.

Ms. RB, too, was aware of writing apprehensive students in her class, "Two or three students, actually." She noted what she saw as an indication of writing apprehension with one student in particular:

One of them got much better over the semester. She's one...that actually learned....the first essay that they did, she kept writing the same two or three sentences in a different way over and over. She said "I just have nothing to say." And I think...she was just unnerved.

For Ms. RB, getting bogged down in rewriting is evidence of writing apprehension. While writer's block is one possible manifestation of writing apprehension, however, writing apprehension and writer's block are certainly not synonymous.

Not only was there a lack of agreement between instructors on the subject of whether or not computers affect

writing apprehension, Ms. RB's own statements in this area were contradictory. Initially, she said that "The students that were good writers were better writers with the computer, but the students that were unsure writers were even more unsure when they had to do it on a computer." This lack of confidence was evident to her because "They didn't want to ask for help," and "to ask about anything makes them feel so small." Later in the interview she went so far as to say "there was quite a bit of it [writing apprehension] that wasn't alleviated by the computers." When asked specifically if she thought the computers had anything to do with the resolution of the problem of writing apprehension, however, she had a different opinion:

Once they got the hang of editing, a lot of the writer's block went away 'cause they could just write for ten minutes and if they didn't like it, they could delete it and start over. But they had to get over that intimidation at first, and I think that intimidation might have been the cause of it to begin with: just getting to learn the computer. Once they realized that nothing was permanent, it was all fluid and changeable, they felt really good, but it took awhile.

In indicating initially that writing apprehension was connected with "not asking for help" and later that it was caused by computer usage, Ms. RB was obviously unsure herself

about where the problem of writing apprehension begins and what sort of indications of it one might observe.

This lack of agreement on the part of the instructors concerning the causes of writing apprehension and whether or not computers are involved was also borne out by the data collected in the surveys (see appendix) as well as by the student interviews. Nothing showed conclusively that writing apprehension was affected one way or the other by computer use.

Student Experience

The six students chosen to participate in the interviews were selected based on two criteria. The first of these was that two students from each class were asked to volunteer to participate in an exit interview. Using statement #13 ("I am nervous about writing") from the WAT as analogous to writing apprehension, the other prerequisite was that of the two students chosen from each class, one showed a decrease in writing apprehension while the other showed no change, based on their responses to the statement. Because of the small sampling available, the one exception to this criteria was with the students chosen from Ms. RF's class. While one of them did demonstrate improvement in the area indicated, the other one chosen shifted the other way, indicating an increase in writing apprehension. There simply was no student in the class whose response to statement #13 had not changed. Those involved were either more or less nervous at the end of the

semester than at the start.

Like the instructors, each of the students interviewed brought diverse backgrounds with them. These variations were found both in their computer experience and in their composition experience, either of which can be a factor in writing apprehension. Students who have little or no computer background, for instance, may experience apprehension when asked to use a computer as a writing tool, especially if they know that they are going to have to use the computer every day. This fear, on the other hand, may be limited to computer rather than writing apprehension.

Computer Experience Student RB01

The students interviewed had varying degrees of computer experience. Student RB01, for example, had "very limited" computer experience. She did not use a computer to write with in high school, and she was not previously familiar with either personal computers (PCs) or Macintoshes (Macs). Thus, it was not surprising to find out that she was not familiar with any word processing software before entering this class. As she put it, the "Last time I'd touched a computer was in the sixth grade." Furthermore, she did not have a computer at home on which to write, indicating that she would have had to seek a computer elsewhere when she had out-of-class assignments to do.

Computer Experience
Student EB01

Student EB01's computer background was similarly underdeveloped. When asked about her computer experience, she replied, "I only took one, one year of introduction to computers in high school." She did not, furthermore, use a computer to write on in high school. While she said that she was "Just a little" familiar with PCs and Macs previous to the class, her familiarity with word processing software was indeterminate. "The only thing I used," she said, "was IBM and that's--I don't know...It was kind of--I think it was WordPerfect." In light of her lack of computer experience, it was not startling to learn that neither did she have a computer at home on which to write. She did indicate that she had access to a computer, however, in the computer room of the dorms in which she lived and in the library.

Computer Experience
Student RF02

Moving up the scale of computer experience slightly, student RF02's background was broader. "I've taken three years in high school," she responded when asked. She did not, though, write on a computer at the time: "...it was more just a typing [class], learning the different keys and stuff like that than it was [involved with learning] the computer." It was enough experience for her that she could claim a familiarity with PCs and with WordPerfect 5.0 and 5.1. Still, like the above mentioned students, she did not have a computer

at home on which to write during the course of the semester and, therefore, was required to go somewhere else if she needed to use one outside of class.

Computer Experience
Student RB06

Student RB06 exhibited yet a little more background with computers. She said of her experience that "I just took a computer class my senior year in high school, and I just taught myself to type fast, you know, just by repetition, and I had to write all those stinking papers, so I learned where all the keys were." She also revealed that she did write on one in high school. Beyond that, she acknowledged that she was familiar with PCs and with Macs previous to the semester of the study, and that she knew "Both WordPerfect 5.1 and Macintosh II: MacWrite, that's what it is, MacWrite." Unlike the first three students, moreover, she did not have to seek a terminal on which to work outside of her home; she owns a Macintosh.

Computer Experience
Student EB11

The one student of this sampling with the most extensive computer background was EB11. Of his experience, he says, "I know...a lot about computers. I've been around them for, like, ten years. I've taken...two computer courses at my last college: one on Basic programming, one dealt with WordPerfect and Lotus, Quattro, all of the major programs." He also used a

computer to write on in his senior year of high school. It is not surprising with this kind of background that he was familiar with PCs and with Macs before nor that he knew WordPerfect. Not only does he have a computer at home, but he said, "when I first got a computer, I got a Commodore 64 about ten years ago, and I used it quite frequently with the pretty old world processor they had back then. And now...I just got a computer a couple of months ago, an IBM 486." That he brought much more computer experience to the classroom than did the other interviewees is unquestionable.

Computer Experience Student RF05

Although not as extensive as EB11, RF05 also brought some significant computer experience with him. He "took a computerized office procedures class in high school that taught us WordPerfect, and that's what we use in this [English 101] class. Also," he said, "I'm taking MIS 101, management information systems, which teaches you five basic programs." He was, accordingly, familiar with PCs (though not with Macs), and he was also familiar with WordPerfect before the semester began. On top of that, he did use a computer for writing while in high school. Interestingly, in light of his background, he does not have a computer at home and so must rely on those in the library when outside of class.

Composition Experience
Student RB01

Composition background varied from student to student also. There were three primary questions to which the students interviewed were asked to respond in this area. Student RB01's responses to these indicated that she had had to write a lot in school. (This question was not limited to high school experience.) It was further discovered that her teachers had generally praised her for her writing. It is interesting to note, though, that when asked to categorize her previous writing experiences as either positive, negative, or neutral, she replied "Neutral," and said that they had "Remained the same throughout high school."

Composition Experience
Student EB01

In responding to the same questions, student EB01 did not indicate an extensive background in writing. When asked if she had written a lot in school, for instance, she replied, "In high school we didn't really write that much. It was more--we read a lot of literature. So writing was minimal, I guess." She did demonstrate in her responses that her teachers had praised her for her writing "In past experiences," but she continued, saying "now I feel I'm kind of more average." Categorizing her previous writing experiences, she added "I think it's more neutral." When requested to elaborate, she responded: "I guess I'm just unsure of myself whenever I write, so it's hard for me to say."

Composition Experience
Student RF02

With absolutely no elaboration offered, student RF02 claimed that, yes, she had written a lot in school. She also attested that her teachers had generally praised her for her writing. When it came to categorization, moreover, of her past writing experiences, she answered simply, "positive."

Composition Experience
Student RB06

Student RB06, as it turned out, had what appeared to be an extensive background in composition herself, possibly the most comprehensive of the six students interviewed. In her writing for school, for example, she attested that she had written a great deal. "I was in two AP [advanced placement] English class," she said, "so I wrote probably two papers a week." Her response to the question of instructor praise was most interesting and quite different from that observed in any of the other six students:

My high school teacher, what she judged on--she took points off for anything bad. You started on a level, and she didn't praise you for anything good. She let you know if it was good, but that wasn't the grading system. She only gave you points on what wasn't bad. I know it sounds complex, but that was to train us for, like AP tests...

As unusual an experience as that sounds to most people, RB06 categorized her previous writing experiences as "positive"

rather than negative or neutral.

Composition Experience
Student EB11

When questioned about whether he had written a lot in school, student EB11 replied, "Yeah, I would say so." He seems to have prospered in the area of instructor praise as well. He remarked, "I've done pretty well over the years...[in] my last English class, I was praised heavily for...some of my papers." Additionally, he chose to categorize his previous writing experience as "Pretty much positive," adding, "it prepares you for your next, you know--anything you have to do in college, you're going to have to do some kind of writing. So my English courses obviously help my writing." While the logic may not be infallible, the positive spirit of the statement is clear.

Composition Experience
Student RF05

Lastly, student RF05 also claimed to have written a lot in school. He was rather ambivalent, though, when it came to answering the question about whether or not his teachers had generally praised him for his writing. His response was "Some do; some don't. It depends who the teacher is." Predictably, as well, he categorized his previous writing experiences as "Neutral," saying, "Some are good; some are bad." Evidently, he had had no outstandingly negative or positive experiences with writing.

Each student, then, brings a wide range of experiences along to the classroom, as do the instructors. Because each experience presents yet another variable, it is impossible to note them all. It is, however, important to be aware of their existence and their significance because one of the first things one must realize about writing apprehension is that it is a highly individualized phenomenon. As such, if instructors are going to recognize and deal with it at all, it must be on this same individualized level. There is no one blanket treatment that will "cure" all.

Student Variations

The students' backgrounds both in computers and in composition lend a different perspective to their reactions to the other questions asked of them during the interviews.

Computers and Writing Apprehension Student RB01

One of those students who had indicated a movement away from writing apprehension by her change in response to statement #13 was RB01. Not surprisingly, when asked during the interview if she had ever experienced writer's block, one possible aspect of writing apprehension, she responded that indeed she had: "Yes. All the time." She went on to note that this phenomenon occurs "a lot of times when I'm handwriting," and that it usually happens "right from the start." Interestingly, she was the only student of the six interviewed for whom the computer played a positive role in lessening the

problem. When asked, for instance, if she thought that computers had any effect on the writer's block, she replied, "Yes. When I write on the computer, everything just comes right out." Furthermore, when queried whether or not computers made a difference to her in overcoming her fears/apprehensions/anxieties about writing, she again responded positively: "Yes. Nothing bothers me. I tend not to sit there and analyze what I'm doing." Also, in an effort to get the students to expand on their responses to statement #13, they were each asked what, if anything, makes them nervous about writing. Student RB01's reply was that she is "Always afraid of what the professor is going to think, if it will meet her requirements. In turn, I get paranoid about what is right. I also feel that my vocabulary is not what they would expect." Additionally, to the follow-up question which asked whether using a computer had made her feel less nervous, more nervous, or no different at all, she responded in an overall positive mode once again. She asserted that it "Really hasn't changed the vocabulary part, but it's changed my idea about what they think. I just don't seem to think about it. I just keep going. Everything flows better." In light of the positive movement of her pre- and post-test responses to statement #13, her answers to the interview questions were not that surprising. She was, however, the exception.

Computers and Writing Apprehension
Student EB01

Even among those students who showed a movement away from writing apprehension based on their responses to statement #13, not one of them also displayed such a positive outlook towards computers in the interviews. Student EB01, for example, when asked if she had ever experienced writer's block, claimed that she had, "Every time I write an essay. I just sit there and...I wait for things to come along." She, too, experiences the occurrence at the beginning of a piece. As she says, "It's usually when I first start the essay." When asked, however, if she thought that using a computer had any effect, she flatly responded "No." She expanded on this response a bit more when asked whether she thought the computer made any differences in overcoming her fears/apprehensions/anxieties; she said, "Not really. I think it's just myself, but I feel, you know, that it[the computer]'s not going to change my insides. When I look at myself, all my writing is right there." Essentially she seemed to be saying that writing for her is an internal struggle; it is not, therefore, something that an external tool such as the computer can make markedly easier. The same idea can be seen in her response when asked what about writing makes her nervous. She indicated that "...if I have to write so that someone reads it, if I know that someone's going to read it, then I get nervous. But if it's only for myself, then I just, I'm fine." Her reply to whether computers made her feel less

nervous, more nervous, or no different was simply "No," "No," and "Yes," respectively. This reaction further supports her earlier assertions that, at least for her, computers do not have any effect on writing apprehension.

Computers and Writing Apprehension
Student RF02

Student RF02, the third of the six students interviewed who demonstrated a positive movement away from writing apprehension in her responses to statement #13, also responded "Yes" when asked if she had experienced writer's block. She too claimed that it tended to occur "Right at the beginning" of writing. Moreover, she explained that in her case, the incident took place "mainly in high school with timed writings and just on my last essay in here..." When questioned about whether the computer had any effect in the area, she not only indicated that she thought it did but also that she felt the effect was negative: "...it kind of makes me feel rushed, and that stresses me out even more, to have to sit there and look at the screen, waiting, and I don't know what to say." It seems obvious that whatever it was that made her feel less nervous about writing at the end of the semester than she had at the beginning, it was not the use of the computer. What did make her nervous about writing, she said, was "That my ideas won't be understandable to others...or too vague. They won't understand exactly what I'm trying to say." As far as the idea that the computer made her feel less nervous, more nervous, or

no different, she plainly stated that "Really, [it had] no effect." It is significant to note that of these three students who were chosen because they did show a reduction in nervousness about writing during the course of the semester based on their survey responses, each had different views in the interviews about whether or not the computer was a factor and in what sense. Of course, the experiences in a computerized classroom are bound to be vastly different. Particularly fascinating, given the small size of the sampling, is that the three of these students cover the same spectrum of reaction that can be found in the current literature on the subject.

Computers and Writing Apprehension
Students RB06 and EB11

When it came to the two students whose response to statement #13 had not changed during the semester, it was not astonishing that neither of them claimed to have had any experience with writer's block. Student RB06 when asked, for instance, responded "No. It[writing]'s my forte." By the same token, student EB11 remarked "No" unequivocally to the same question. Needless to say, neither of them was in a position to speculate whether or not the computer had an effect on a phenomenon which they had never experienced. When asked whether computers made a difference in writing fears/apprehensions/anxieties, however, each had a slightly different opinion. Student RB06, for example, simply stated

that "I don't really have any of those about writing," undoubtedly because she already considers herself a secure, successful writer. EB11's response was broader. Even though he never claimed to have any such fears/apprehensions/anxieties himself, when asked if he thought the use of computers helped, he replied, "I don't think it does any of that." It sounded as if he meant the statement to involve everyone in a general sense, not just as it applied to him personally. Neither student RB06 or EB11 had much to offer about what makes them nervous about writing, either. When asked, RB06 replied, "Nothing. I mean, I don't stress about my spelling. I know it's bad, but, you know, it can be remedied fairly easily. It's not like it's...uncontrollable." Similarly, the one thing mentioned by student EB11 seems minor when compared to others' concerns. For him, "The only thing" about writing that makes him feel nervous "is trying to make a deadline." And, when asked whether computers affected his nervousness at all, it was not shocking that he said they had "Not affected [him], really." After all, a tool such as a computer cannot be expected to have an effect on an apprehension that barely exists.

Computers and Writing Apprehension Student RF05

The one student of the six who showed, through his pre- and post-test responses to statement #13 from the WAT, a movement demonstrating an increase in writing apprehension was

student RF05. Unlike his two intended counterparts, he did not claim to be inexperienced when it came to writer's block. Neither did he claim the frequency of occurrence that the other three did. Instead, his response was that he "sometimes" experienced the circumstance. Another dissimilarity between him and those three students who were very familiar with writer's block was that his experience with it did not occur at the beginning of a paper. Rather, he said that it was more likely to happen to him "Probably in the middle, actually the...body part," and that his difficulty lie in "getting my ideas out" and trying to "nail what I want to say. So I have to think on it." Upon inquiring whether he thought computers had any effect on the problem, his "not really" response reflected the same belief as found in student EB01. When the question about computers and their effect on fears/apprehensions/anxieties was posed, moreover, his reply to the idea that computers had any effectiveness in the area was, "Not really. It's still writing, so you shouldn't be afraid to write." In this sense, student RF05's response was both similar to that of student EB01 as well as to the implied generality seen in the response given by student EB11.

Computers and Writing Apprehension Student EB11

When it came to trying to clarify just what it was that made him nervous about writing, student EB11's reply was as individually different as were the responses of the other five

students. For him, the nervousness lies "Probably [in] the grade I'm going to get in the class 'cause everybody's worried about their grades. So I try to make it, I try to stick to the topic she gave us as best I can." Given his definition of what it is that makes him nervous, his reaction to the question which asked if the computer eased, increased, or had no effect on his nervousness was not unanticipated. He maintained that it had "not [made him] more nervous," and that "It's probably the same," indicating once again that in his opinion computers do not play a major role in writing apprehension.

The important point to note here is that, while the two extremes are represented nicely by students RB01 and RF02, the greater majority of those interviewed felt that computer usage does not have an effect one way or the other on either writer's block or on fears or nervousness associated with writing. On a larger scale, furthermore, this is borne out by the evidence collected in the pre- and post-tests (see Appendices D and E). There are, of course, some individual exceptions as those observed in students RB01 and RF02. As a whole, however, no major differences were found in writing apprehension levels that could be attributed to the computer. Based on the surveys completed at the beginning (pre-test) and at the end (post-test) of the semester, less changed than stayed the same.

CHAPTER 5

INTERPRETATION

The results of the study indicate that writing apprehension is not a phenomenon which can be easily solved by an external tool like the computer. Although the computer is a popular panacea these days for other fields and other areas of composition, it does not seem to be a cure-all in the area of writing apprehension. The crux of the writing apprehension issue may well lie instead with instructor awareness.

Writing apprehension, as is true with many other fears, tends to be self perpetuating if not addressed. The scope of possible difficulties which can and do exist from letting such a thing go unheeded is overwhelming. People who suffer from this sort of anxiety can be affected in many ways other than those associated with a few short months in the classroom. Some, for instance, are even affected to the point that they will intentionally seek out employment where writing is not a required activity. Even if the apprehension only goes so far as to affect the small daily tasks that every individual has to face, it has gone too far. This researcher is familiar with one case, for instance, where a student was apprehensive about his poor handwriting and poor spelling skills. The more he was

made aware of these shortcomings, the more he withdrew into himself to avoid the activity which spawned them. This apprehension and its results contributed to his motivation for dropping out of school. While he took a good job (at a factory where no writing was necessary) and came to be financially stable, to this day he is so apprehensive about writing that it is distressing for him to write even the simplest of notes to the milkman. This particular instance is very close to this investigator, as the subject involved is her father. His is not an exceptional case.

Students, people, potential writers often start to develop these apprehensions long before they become college freshman facing the dilemma of having to take a composition class. There is no way to police every child's development through his formative years into early adulthood. As researchers and instructors in the field, however, educators have the responsibility to be cognizant of this problem and to arrest it, when possible, before it becomes an overpowering force. The first thing to understand is that no matter how apparently trivial the original cause, writing apprehension feeds on itself as time passes until it eventually becomes deeply ingrained.

One of the ways college-level composition students handle apprehension is by turning to formulaic responses. It is common for them, for instance, to depend on a structure such as the five-paragraph essay to get them through the fearful

process of writing. That is not to say that the five-paragraph essay is an evil which must be done away with. It can be very useful in many cases as an organizational launching point for students. Some writing apprehensive students, however, see it as the desired end product rather than a suggested way of beginning. Not only does this provide them a safe framework to hide behind, but they learn early that this sort of structure often gets the desired results: passing grades and/or other rewards which simply reinforce the problem.

Writing apprehensive students are probably the hardest to convince that the purpose of writing is not to please the instructor. Writing is a discovery process which is initiated internally. As every writer brings a different set of experiences to every piece he or she writes, so too does every reader. For this reason, students must realize that every essay they write is at best an attempt to communicate what it is they actually mean. Such fear-induced responses as the five-paragraph essay or the "properly" constructed sentence tend to become overly important and result in exactly the kind of external writing that most good instructors warn their students against. Significant examples of such writing abound in the composition classroom. One apparent instance is when a student assumes the instructor (the perceived audience) shares the same body of knowledge in a given area as the writer. As most instructors know, even if they do happen to be well versed in the intricacies of veterinary medicine, the writer

should not assume such a knowledge. In such incidences, students who rely on rules of "proper" construction may even fail an assignment because they have become so preoccupied with form that they neglect content.

The common denominator for writing apprehensive students is their perceptions of the instructor. The student interviews are evidence of this truth. Even in those instances where the apparent cause of the apprehension is something as insignificant as the appearance of their handwriting, these students are all struggling with one overriding thought: "What will the instructor think?" It is often this deep desire to find the proper hoops to jump through in order to please the instructor by writing "correctly" that results in external, instructor-based writing. What these students do not realize is that there is no correct way to write, and pleasing the instructor is the last thing with which a fledgling composition student should be concerned. Instead, students should be concerned with what it is they are trying to communicate from within themselves.

Casting the instructor in this role as omnipotent authority figure only perpetuates the fear of writing. Most instructors try to make clear to their students that they are available to provide assistance on an individual basis. That is why instructors keep office hours. Students, however, who assume that by virtue of teaching a class the instructor knows all, frequently feel that they know nothing in comparison;

pleasing the instructor, therefore, becomes paramount, and their own development as writers suffers. Instructors, on the other hand, need to be aware that the problem of writing apprehension does exist in order to be of any help to the student.

The same sort of inhibiting connection which exists in these cases between student and instructor can be seen in many doctor-patient relationships. Often patients are uncomfortable, even afraid to ask their doctor questions. In their perceptions, the physician is an authority in the field, and who are they to question an expert? This apprehension, in turn, keeps them from making the inquiries that would probably put their fears to rest. A few carefully chosen questions can go far in quelling the fear of the unknown. It is much easier to face and deal with something when one knows what it is one is facing.

The same is true for students and instructors of composition. Even when their papers are marked with comments they do not understand, rarely will most students seek out the instructor for clarification. As Ms. RB noted, students do not want to ask for help because "to ask about anything makes them feel so small." In far too many cases, students merely accept the grade as a fait accompli and go on to the next assignment as unaware as they were before, simply because they are apprehensive about approaching the instructor with a "dumb question." What both students and instructors need to realize

is that the only "dumb question" is the one which goes unasked, not only on an individual basis, but within the classroom as well. Those few students who do ask the questions are usually helping the rest of the class as well as themselves.

One of the first things a doctor must know to be of help to his patients is that they may have unspoken apprehensions. It is part of his or her job to make the patient comfortable enough to ask the questions which will allay the fears. Those doctors who do accomplish this are frequently referred to as having a "good bedside" manner. Correspondingly, students of composition need to be made to feel that asking for help is an expected part of the learning process. The first step an instructor must take in order to make this possible is being aware that writing apprehension exists at all.

Far too many instructors, however, are not even familiar with the term, much less the problem. When interviewing those instructors participating in this study, for instance, it became clear that none of them knew what was meant by writing apprehension. When the investigator provided a definition, part of which was that writing apprehension sometimes manifests itself as "writer's block," these instructors seized on the latter term and chose to frame their responses in that context. Ms. RF, for example, when asked if she thought that computers had any effect on writing apprehension, said, "I can't think of a situation where I felt that the computer

specifically helped people with writer's block...I never thought of it in terms of writer's block, and I don't really see a specific connection." While she avoided either term, Ms. EB also tended towards the definition of writer's block, saying that she had some students who had "some problem getting started," and that she was "really quite concerned...because [she] had quite a few people that got...one paragraph done" on their first in-class writing assignment. Ms. RB also dealt within the same context: "Once they got the hang of editing [on the computer], a lot of the writer's block went away...." The investigator may be partially at fault here by providing the term "writer's block" in the definition of writing apprehension in the first place; what is more important is that these instructors had probably never dealt with writing apprehension consciously. Were they aware of the problem at all, they would have understood the term immediately even if they had never heard it before.

These instructors may suffer from writing apprehension themselves. Even highly successful writers may suffer some degree of it. As the instructors did not participate in the surveys, it is impossible to say for sure. Whether or not they are apprehensive themselves, if they are unaware of the concept of writing apprehension except in terms of writer's block, then it follows that they are not consciously dealing with it in the classroom. Additionally, not dealing with it will almost always serve to reinforce rather than break down

the barriers that the students bring with them.

The lack of awareness on the part of these and other instructors may be a shortcoming, but one cannot deem them culpable. Ideally, primary and secondary teachers should also be aware of this problem. It would undoubtedly be of great help if they were trained in and dealt with writing apprehension as it starts to occur. The earlier it is recognized and handled, the less of a deeply ingrained problem it will be later on. Even limiting it to the college level for the moment, not only is it not generally being dealt with, but most instructors are unaware that it exists. Very few instructors, particularly graduate assistants, are ever given much instruction themselves. They are frequently students who have been trained in literature and are then thrown into the composition classroom and told to teach. Certainly they get a great deal of experience in the classroom, but at least until such a point as that experience has time to accrue, new instructors will generally rely on whatever text they are given to work with.

Texts are another problem. They do not usually deal with writing apprehension. As has been shown, the body of research dealing with the subject is very small, and its importance has not yet been realized by the greater composition community. Hence, not only are such research results not likely to appear in a text for English 101, but individual instructors would have to go out of their way to acquire any knowledge about the

subject. There is no question that the writing apprehension is a problem, or that it is something that instructors should be addressing. The greater question is that if they are going to deal with it, where do they get their information? One of the conclusions suggested by this study is that more investigation is necessary to help both expand and disseminate knowledge about writing apprehension.

Originally conceived as a primarily Experimental undertaking, one of the areas that became more important in this study than was expected was the significance of the variables brought to each class by the instructors and by the students. The implications of the diversity found in each one's background alone are staggering. In retrospect, it seems inconceivable that any study undertaken within the realm of composition should disregard this type of microcosmic information entirely. That is not to say, necessarily, that research in the area should be based solely on such individualized profiles, either. What does seem apparent is that a combination of methodologies can be highly effective. It makes sense that the more perspectives we have on a given problem, the more clearly we will be able to see it from all sides.

It is true that this study offered a small cross section of responses from students and instructors to the question involved. It is also true that one cannot infer from such a sampling that the results garnered are necessarily valid for

the field of composition as a whole. Indeed, the implications of a study of this nature are bound to be pointing to general inferences at best. The greater truth, instead, lies in the fact that no matter their accuracy for the group involved, such results cannot be seen as conclusive on their own.

No definitive conclusion concerning the effect of computer usage on writing apprehension has yet been reached. It is apparent, therefore, that there is a need for still other research in this area. Potential researchers also need to keep in mind that, although the typical study in this area is based in experimental methodology, other methodologies or combinations could also help to more fully define the field. Studies based in ethnography or on clinical or protocol methods, for instance, could be of value. Just because experimentation is the most common method of research does not mean that the other areas are any the less significant. Then again, further research of an experimental nature would also be welcome. No one study may ever provide the composition community with a definitive answer on whether or not computers affect writing apprehension, but by bolstering the research already in existence, they could contribute "carefully tested bits of knowledge toward the construction of some larger whole" (North 145). Even if they were studies based on experimental replication, they would still be of merit in the search for an answer. As North says about the process of replication,

No matter how long this process is carried on...it never establishes an absolute certainty; all Experimental knowledge, no matter how carefully or rigorously tested, remains relative, a probability. Probably the better way to think of it, though it may seem counter-intuitive, is as a method that seeks to approach certainty by reducing uncertainty (151).

Moreover, knowing as we now do how students reacted to the circumstances presented in this study, further research from yet a different angle might be valuable. For instance, whereas this study focused primarily on the effect of computers on writing apprehension, the one factor that seemed to be common to virtually all of the students' responses to writing apprehension was the instructor's importance. Why not, then, develop this variable in future research? One could, for instance, take this same basic configuration, employing three equally inexperienced graduate assistants, and expand it to cover two semesters. One could then conduct the same types of pre- and post-test surveys as well as student and instructor interviews the first and second semesters. Given an imposed variable, as well as the fact that each of the three instructors would have one semester's experience in teaching composition by the second semester, students' reactions to writing apprehension and computer usage could be successfully compared over the year. The variable might be a weekend

seminar on writing apprehension which all of the instructors would attend between semesters. Granted, the scope of such a research project would far exceed the limitations of the one conducted here, but there is no reason why we should ever succumb to our limitations. If, indeed, we are to find answers and to "make knowledge," we must always be prepared to "push the outside of the envelope."

APPENDIX A

Questionnaires

PLEASE NOTE

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not been filmed at the request of the author.
They are available for consultation, however,
in the author's university library.**

**78-82,
Appendix A**

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APPENDIX B

SEQ Charts

Speilberger's Self-Evaluation Questionnaire
Pre- and Post-Test Results
19 Students Total
Fall 1993

☐ Ms. RB's Class
☒ Ms. EB's Class
☐ Ms. RF's Class

	PRE					POST			
	Strongly Disagree	Disagree	Agree	Strongly Agree		Strongly Disagree	Disagree	Agree	Strongly Agree
1	0	0	4	2	1	1	0	2	3
2	0	0	3	3	2	0	0	2	3
3	4	2	2	0	3	4	1	1	1
4	0	0	3	3	4	1	0	2	2
5	0	0	4	2	5	1	0	2	2
6	5	1	0	0	6	5	2	0	1
7	5	2	1	0	7	5	2	0	1
8	0	0	4	2	8	1	0	1	3
9	4	2	2	0	9	5	2	1	0
10	0	0	4	2	10	0	0	1	5
11	0	1	3	2	11	0	2	0	4
12	4	1	1	0	12	4	1	0	1
13	3	1	2	0	13	3	1	1	1
14	5	1	0	0	14	3	2	0	1
15	0	0	4	2	15	1	0	1	4
16	0	0	2	4	16	0	1	3	2
17	4	1	0	0	17	5	2	0	1
18	3	2	1	0	18	3	2	1	2

Speilberger's Self-Evaluation Questionnaire
Pre- and Post-Test Results
Ms. RB's Class
6 Students
Fall 1993

PRE					POST				
	Strongly Disagree	Disagree	Agree	Strongly Agree		Strongly Disagree	Disagree	Agree	Strongly Agree
1	0	0	4	2	1	1	0	2	3
2	0	0	3	3	2	0	1	2	3
3	4	0	2	0	3	4	0	1	1
4	0	1	2	3	4	1	1	3	1
5	0	0	4	2	5	1	1	2	2
6	5	1	0	0	6	5	0	0	1
7	5	0	1	0	7	5	0	0	1
8	0	0	4	2	8	1	1	1	3
9	4	2	0	0	9	5	0	1	0
10	0	0	4	2	10	0	1	0	5
11	0	1	3	2	11	0	2	0	4
12	4	1	1	0	12	4	1	0	1
13	3	2	1	0	13	3	1	1	1
14	5	1	0	0	14	3	2	0	1
15	0	0	4	2	15	1	1	0	4
16	0	0	2	4	16	0	1	3	2
17	4	2	0	0	17	5	0	0	1
18	3	2	1	0	18	3	1	0	2

Speilberger's Self-Evaluation Questionnaire
Pre- and Post-Test Results
Ms. EB's Class
9 Students
Fall 1993

PRE					POST				
	Strongly Disagree	Disagree	Agree	Strongly Agree		Strongly Disagree	Disagree	Agree	Strongly Agree
1	1	0	6	2	1	0	0	8	1
2	0	3	4	2	2	0	1	6	2
3	1	6	1	0	3	3	4	2	0
4	0	3	4	3	4	0	4½	4½	0
5	1	1	6	1	5	0	1	7	1
6	1	5	3	0	6	2	7	0	0
7	2	4	3	0	7	6	3	0	0
8	0	3	5	1	8	0	1½	5½	2
9	2	5	2	0	9	4	4	1	0
10	0	2	5	2	10	0	1	7	1
11	1	3	4	1	11	0	1	6	2
12	1	4½	3½	0	12	3	5	1	0
13	3	5	1	0	13	4	4	1	0
14	1	4	4	0	14	3	4½	1½	0
15	0	2	6	1	15	0	1	7	1
16	0	2	6	1	16	0	1	7	1
17	2	6	1	0	17	2	6	1	0
18	1	4	4	0	18	3	5	1	0

Speilberger's Self-Evaluation Questionnaire
Pre- and Post-Test Results
Ms. RF's Class
4 Students
Fall 1993

PRE					POST				
	Strongly Disagree	Disagree	Agree	Strongly Agree		Strongly Disagree	Disagree	Agree	Strongly Agree
1	0	1	2	1	1	0	1	2	1
2	0	1	1	2	2	0	2	1	1
3	2	1	1	0	3	1	1	1	1
4	0	3	0	1	4	0	0	2	2
5	0	0	4	0	5	0	1	3	0
6	1	3	0	0	6	2	2	0	0
7	2	2	0	0	7	2	2	0	0
8	0	0	2	2	8	0	1	2	1
9	2	2	0	0	9	2	2	0	0
10	0	1	1	2	10	0	1	3	0
11	0	0	2	2	11	0	2	2	0
12	1	3	0	0	12	1	1	2	0
13	1	2	1	0	13	1	3	0	0
14	1	3	0	0	14	2	1	1	0
15	0	1	2	1	15	0	1	1	2
16	0	0	4	0	16	0	1	1	2
17	1	3	0	0	17	2	1	1	0
18	0	4	0	0	18	2	1	1	0

APPENDIX C

WAT Charts

Daly and Miller's Writing Apprehension Test
Pre- and Post-Test Results
19 Students Total
Fall 1993

☐ Ms. RB's Class
☒ Ms. EB's Class
☐ Ms. RF's Class

	PRE					POST			
	Strongly Agree	Disagree	Agree	Strongly Disagree		Strongly Agree	Disagree	Agree	Strongly Disagree
1	0	0	2	4	1	0	1	2	3
2	2	0	4	0	0	2	1	2	1
3	3	1	2	0	0	3	3	0	0
4	1	1	2	2	0	0	1	3	2
5	0	2	1	3	0	0	0	2	4
6	2	3	1	0	0	4	1	1	0
7	2	1	1	2	0	1	0	5	0
8	1	0	1	2	2	0	0	2	4
9	1	1	1	2	0	1	0	2	3
10	3	3	0	0	0	3	2	1	0
11	1	4	1	0	0	1	3	2	0
12	2	0	4	0	0	1	4	1	0
13	1	2	1	2	0	0	1	3	2
14	0	3	3	0	0	1	3	2	0
15	2	4	0	0	0	3	3	0	0
16	1	1	2	4	0	1	0	3	2
17	0	3	3	0	0	2	2	2	0
18	0	0	4	2	2	0	0	2	4
19	1	3	2	0	0	3	2	1	0
20	0	3	3	0	0	2	3	1	0
21	2	0	2	2	0	1	0	4	1
22	0	1	3	2	3	0	0	2	4
23	1	3	1	1	0	1	4	1	0
24	2	1	3	0	1	0	2	3	1
25	1	1	3	1	1	0	0	3	1
26	0	1	2	3	2	0	0	4	2

Daly and Miller's Writing Apprehension Test
Pre- and Post-Test Results
Ms. RB's Class
6 Students
Fall 1993

PRE					POST				
	Strongly Agree	Disagree	Agree	Strongly Disagree		Strongly Agree	Disagree	Agree	Strongly Disagree
1	0	0	2	4	1	0	1	2	3
2	2	0	4	0	2	2	1	2	1
3	3	1	2	0	3	3	3	0	0
4	1	1	2	2	4	0	1	3	2
5	0	2	1	3	5	0	0	2	4
6	2	3	1	0	6	4	1	1	0
7	2	1	1	2	7	1	0	5	0
8	1	0	1	4	8	0	0	2	4
9	1	1	1	2	9	1	0	2	3
10	3	3	0	0	10	3	2	1	0
11	1	4	1	0	11	1	3	2	0
12	2	0	4	0	12	1	4	1	0
13	1	2	1	2	13	0	1	3	2
14	0	3	3	0	14	1	3	2	0
15	2	4	0	0	15	3	3	0	0
16	1	1	2	2	16	1	0	3	2
17	0	3	3	0	17	2	2	2	0
18	0	0	4	2	18	0	0	2	4
19	1	3	2	0	19	3	2	1	0
20	0	3	3	0	20	2	3	1	0
21	2	0	2	2	21	1	0	4	1
22	0	1	3	2	22	0	0	2	4
23	1	3	1	1	23	1	4	1	0
24	2	1	3	0	24	0	2	3	1
25	1	1	3	1	25	0	0	3	3
26	0	1	2	3	26	0	0	4	2

Daly and Miller's Writing Apprehension Test
Pre- and Post-Test Results
Ms. EB's Class
9 Students
Fall 1993

PRE					POST				
	Strongly Agree	Disagree	Agree	Strongly Disagree		Strongly Agree	Disagree	Agree	Strongly Disagree
1	0	1	7	1	1	0	1	7	1
2	1	6	1	1	2	1	5½	2½	0
3	3	4	2	0	3	2	6	1	0
4	1	0	6	2	4	0	2	5	2
5	0	1	6	2	5	0	1	6	2
6	1	7	1	0	6	1	7	1	0
7	1	0	7	1	7	1	0	7	1
8	0	0	8	1	8	0	0	7	2
9	0	6	2	1	9	2	2	4½	½
10	2	6	1	0	10	1	7	0	1
11	1	6	1	1	11	2	5½	1½	0
12	0	4	5	0	12	1	5	3	0
13	1	0	6	2	13	0	1	7	1
14	0	8	1	0	14	0	7½	½	0
15	3	5	1	0	15	2	6	1	0
16	1	0	8	0	16	0	1½	7½	0
17	2	4	3	0	17	1	5	3	0
18	0	1	4	3	18	0	0	7	2
19	1	6½	1½	0	19	1	7	1	0
20	0	3	6	0	20	½	5½	3	0
21	1	0	7	1	21	0	1½	7½	0
22	0	1	7	1	22	0	0	7	2
23	0	5	3	1	23	0	6	2	1
24	1	½	6½	1	24	1	1	6	1
25	1	2	5	1	25	0	3½	4½	1
26	1	0	4	4	26	0	0	7	2

Daly and Miller's Writing Apprehension Test
Pre- and Post-Test Results
Ms. RF's Class
4 Students
Fall 1993

PRE					POST				
	Strongly Agree	Disagree	Agree	Strongly Disagree		Strongly Agree	Disagree	Agree	Strongly Disagree
1	0	0	3	1	1	0	1	3	0
2	0	3	1	0	2	0	3	0	1
3	0	4	0	0	3	0	2	2	0
4	0	1	3	0	4	0	1	2	1
5	0	1	3	0	5	1	1	2	0
6	0	2	2	0	6	1	2	1	0
7	1	1	2	0	7	0	2	2	0
8	0	0	2	2	8	0	0	3	1
9	0	2	2	0	9	1	0	1	2
10	0	4	0	0	10	1	3	0	0
11	0	2	2	0	11	1	2	1	0
12	0	3	1	0	12	1	1	2	0
13	0	1	3	0	13	0	1	2	1
14	0	4	0	0	14	1	2	0	0
15	0	3	1	0	15	1	2	1	0
16	0	0	4	0	16	0	0	2	1
17	0	2	2	0	17	0	3	1	0
18	0	0	2	2	18	0	0	3	1
19	1	3	0	0	19	1	3	0	0
20	0	2	2	0	20	0	3	1	0
21	0	0	4	0	21	0	2	2	0
22	0	0	1	3	22	1	0	3	0
23	0	3	1	0	23	0	1	3	0
24	0	1	2	1	24	0	1	2	1
25	0	2	1	1	25	0	0	4	0
26	0	0	2	2	26	0	0	3	1

APPENDIX D

SEQ Responses

SEQ Significant Differences

Significant change was found in responses to seven of the statements from the Self-evaluation Questionnaire (SEQ). Given the few numbers of students who ultimately participated in the study by taking both the pre- and the post-test surveys (nineteen), "significant" differences in responses were determined based on a difference of three or more changes occurring in any given category. The first of these statements which showed this level of variation is "I feel strained when the computer doesn't do what I want it to do" (#4). The change here was primarily found with those who "strongly agreed" with the statement. Seven students felt this way at the beginning of the semester, whereas only three "strongly agreed" with it at the end.

The numbers of students who agreed with #6, "I feel upset when I am given a computer assignment" also showed marked change. Three students chose the "agree" response to this statement in the pre-test; none chose "agree" in the post-test.

Another significant shift in pre- and post-test SEQ responses was noted concerning the statement, "I am presently worried about the possible computer assignments for this class" (#7). Nine students "strongly disagreed" with that statement initially. By the end of the semester, however, that number rose to thirteen. At the same time, while four students "agreed" with the statement in the pre-test, none did in the

post-test.

"I feel frightened when I think I will need to work on the computer" (#9) was another statement which elicited significantly different responses from students at the beginning and at the end of the semester. Eight students "strongly disagreed" with the statement in the pre-test and eleven in the post-test. Also, nine chose to "disagree" with it initially, and only six finally. These shifts in the intensity with which students disagreed with the statement may be somewhat offsetting, however.

To the statement, "I am relaxed when I type answers or information into a computer" (#15), pre- and post-test responses changed significantly in the "agree" and "strongly agree" categories. At the beginning, twelve students "agreed" with the statement, while only eight "agreed" at the conclusion. However, this may be partially balanced by the fact that whereas four students "strongly agreed" with it at first, seven "strongly agreed" later.

Another statement which displayed a marked variation in responses was "I am worried when I finish using a computer" (#17). The main change here was in the "disagree" category. Eleven students "disagreed" with such a statement initially. This number dropped to seven, however, by the end of the study.

Finally, the responses to the statement "I feel confused when I try to think through information I need to type into

the computer" (#18) exhibited distinct changes in three of the four categories. Only four students "strongly disagreed" with it at the beginning; this number doubled in the post-test. Part of this may be accounted for by the fact that while ten students "disagreed" with the statement initially, only seven "disagreed" later. While it is somewhat surprising to find such a wide variety of change in the responses to a single statement, five students "agreed" with it in the pre-test and only two in the post-test.

As one can see, while there are significant changes to some of the categories of response to these statements, they are frequently offset by changes in other categories. These differences cannot necessarily be attributed to the specific classes or to the individual respondents. Taking the three classes as a whole, overall responses indicate that students became less apprehensive about using the computer than they were initially.

SEQ Similarities

While it may sound contradictory at first, equally important in a study of this nature are those responses which are significant because they showed little or no change from pre- to post-test. In taking all three classes as a single group, no change occurred in at least one category of response for nine of the eighteen statements in the Spielberger's Self-evaluation Questionnaire. For instance, the number of responses to statement #3, "I am tense when I work with a

computer," remained the same for one response category from pre- to post-test. Four students "agreed" with the statement in both cases. Similarly, responses to "I feel upset when I am given a computer assignment" (#6) and "I am relaxed when I type answers or information into a computer" (#15) stayed the same for the "disagree" category, with nine students "disagreeing" with the former statement and three with the latter.

Furthermore, significant similarity in numbers of responses can be seen in two of the response categories of four of the other statements from the SEQ pre- and post-test results. Responses to the statement, "I feel secure when I work with a computer" (#2), for example, remained the same for both the "strongly disagree" and the "disagree" categories. In both pre- and post-tests, no students "strongly disagreed" with the statement and four "disagreed" with it. Similarity in the numbers of pre- and post-test responses to the statement "I feel frightened when I think I will need to work on the computer" (#9) can also be found in two response categories. In this instance, however, two students "agreed" with the statement and none "strongly agreed" with it. Moreover, responses to the statements, "I feel at ease when I am given a computer assignment" (#5) and "I feel content when I finish using a computer" (#16) remained the same in number for the same two response categories: "strongly disagree" and "strongly agree." In the case of statement #5, one student

"strongly disagreed" with the statement and three "strongly disagreed" at both the start and the end of the semester. No students "strongly disagreed" with question #16, and five "strongly agreed" with it in the pre- and post-tests.

Of perhaps the greatest interest in this macro-analysis of the SEQ pre- and post-test responses of the group as a whole is that the responses to two of the statements remained the same for all of the response categories. The first of these was the statement, "I feel calm when I think about computers" (#1). Briefly, one student "strongly disagreed" with the statement, one "disagreed," twelve students "agreed" with it, and five "strongly disagreed" at the beginning and at the end of the semester. The other statement which also displayed significant similarity in the number of responses in all four response categories from pre- to post-test was "I feel comfortable when I think about doing computer assignments" (#10). Both before and after, no students "strongly disagreed" with the statement, three "disagreed" with it, ten "agreed," and six "strongly agreed." The lack of change in the distribution of these responses is highly significant, as it indicates that for a great many, attitudes towards working with computers did not significantly change.

APPENDIX E

WAT Responses

WAT Significant Differences

While some students seemed to become more comfortable when working with computers, this lessening of apprehension did not hold true for the group when applied to writing. Still, some significant changes were found in the pre- and post-test responses to Daly and Miller's Writing Apprehension Test (WAT). One of the statements from this questionnaire which showed significant change in responses was "Handing in a composition makes me feel good" (#6). Three students "strongly agreed" with this at the beginning of the semester. Six "strongly agreed" by the end.

To the statement, "My mind seems to go blank when I start to work on an essay," (#7) students showed a marked change in their responses as well. Initially, nine "disagreed" with the statement. Later in the semester, however, this number changed to fourteen. That, indeed, is quite a leap given the number of students participating.

Many more students "agreed" with the statement "I would enjoy submitting my writing to a magazine for evaluation and publication" (#9) at the beginning of the semester than at the end. In fact, this number plummeted from nine who "agreed" in the pre-test to two in the post-test.

There was also a distinct change in the responses to the statement, "I like to have my friends read what I have written" (#12). Seven students "agreed" with it initially. This number rose to ten at the conclusion. Furthermore,

although ten "disagreed" with the statement in the pre-test, only six "disagreed" later. These changes are somewhat curious given the way the responses to the previous statement changed (#9).

In their responses to the statement "Discussing my writing with others is an enjoyable experience" (#20), students also showed a marked change from beginning to end of semester. Eight "agreed" with the statement in the pre-test, while eleven "agreed" in the post-test. In relation to this same statement, moreover, eleven students "disagreed" with it at first, but only five did in the post-test.

Lastly, the responses to the last statement on the survey, "I'm no good at writing," (#26) showed significant variation in the "disagree" and "strongly disagree" categories. In the pre-test, eight students "disagreed" with the statement. This number jumped to fourteen in the post-test. In addition, while nine "strongly disagreed" with it initially, only five did at the end of the term.

WAT Similarities

Again, as with the review of the significant changes to responses to the statements in the Self-evaluation Questionnaire, those found with the Writing Apprehension Test cannot necessarily be said to apply to each class as a separate entity or to each individual participant. As a whole group, however, it is obvious that while some positive change did occur, so too did some negative change. Overall, none of

the data was enough to support the idea that using computers had a measurable effect on students' writing apprehension.

Lack of significant change in the numbers of responses in various response categories to the statements in the WAT was also extensive. While no one statement held the same in all four response categories, eighteen of the twenty six statements exhibited no change in at least one of the four. Of the eleven statements in which the number of responses stayed the same in one of the response categories, "I have no fear of my writing being evaluated" (#2) was the only one for which the unchanged category was "strongly agree," with three students responding in that manner on both the pre- and post-tests. "Taking a composition course is a very frightening experience" (#5) was the one statement in the "disagree" category which did not change. Both at the beginning of the semester and again at the end, ten students "disagreed" with this statement. The only other statement of the eleven which showed a lack of change in one category of response unlike any of the others was "My mind seems to go blank when I start to work on an essay" (#7). Two students "agreed" with this statement early on and two later. Similarity in numbers of responses to the eight other statements which displayed a lack of change in only one category was limited to the "strongly disagree" category. Pre- and post-test responses to the statement, "When I hand in a composition, I know I'm going to do poorly" (#22) each numbered six. Of interest is the fact

that responses to the remaining seven statements in question, "I look forward to writing my ideas down" (#3), "Handing in a composition makes me feel good" (#6), "I like to have my friends read what I have written" (#12), "People seem to enjoy what I write" (#14), "Writing is a lot of fun" (#17), "I like seeing my thoughts on paper" (#19), and "Discussing my writing with others is an enjoyable experience," (#20) not only stayed the same in one category, and not only was that category the same for each, but the numbers of responses to each of these statements in the category involved was the same in both the pre- and post-tests. None of the participating students "strongly disagreed" with any of these statements either at the start or at the end of the term.

Significant similarities in the numbers of responses to the WAT statements were also evident in two of the four response categories for seven of the statements. The statement, "I avoid writing" (#1) was one of these. None of the participating students "strongly agreed" with this in either the pre- or the post-test. Furthermore, twelve students both "disagreed" with it in the beginning and at the end. Responses to the statement, "I would like to write down my ideas" (#10) also went unchanged from pre- to post-test in these same two categories of response. Five students "strongly agreed" with the statement; one student "disagreed."

Two of the other statements where numbers of responses stayed the same for two of the four categories, "Expressing

ideas through writing seems to be a waste of time" (#8) and "I'm nervous about writing" (#13), also displayed their lack of change in the same two categories. This time, however, the categories involved were "agree" and "strongly disagree." None of the students "agreed" with the first statement, and seven students "strongly disagreed" with it in both the pre- and the post-tests. At the beginning and later at the end of the semester, three students "agreed" with #13 and four "strongly disagreed."

There were three other statements in the WAT in which the numbers of responses did not change for two of the response categories from pre- to post-test. One of these was "I enjoy writing" (#15). Both beginning and end, two students "disagreed" with the statement and none "strongly disagreed." None of the students involved "strongly agreed" with the statement "I expect to do poorly in a composition course even before I enter it" (#18) either early in the semester or at the end. Seven students, however, "strongly disagreed" with it. Finally, one student "strongly agreed" with the statement "It's easy for me to write good compositions" (#23) and eleven "agreed" in both the pre- and post-tests.

Such a number of unchanged responses to the statements on the SEQ and those on the WAT are glaringly significant to the overall results of this survey. For one thing, only twelve of a possible seventy two categories in the SEQ were shown to have displayed "significant changes" for the three classes as

a group. On the other hand, nineteen of the seventy two showed no change at all. Where the WAT is concerned, nine of a possible one hundred four categories were found to exhibit signs of significant change from pre- to post-test for the entire group. Similarities in numbers of responses, however, were discovered in twenty five of the 104 possible category combinations. Such evidence goes a long way in showing that less changed than stayed the same.

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TO: Jennifer Alarid

FROM: Dr. William Schulze, *WS* Director, Office of Research Administration

DATE: 31 August 1993

RE: Status of Human Subject Protocol entitled:
"Computers & English Composition"

This memorandum is official notification that the protocol for the project reference above has been approved. This approval is for a one year duration. At the end of the year, you must notify this office if the project will be continued.

If you have any questions or require any assistance, please give us a call.