The teacher-centered "writing across the curriculum" program at Michigan Technological University has as its main thrust to educate teachers from all disciplines in the functions and processes of language, to provide a framework for assistance with pedagogical strategies, and to provide follow-up experiences necessary to create a community of teachers continually cognizant of the relationships between language and learning. The focus of the program is on written language and its four major functions: communication, self-expression, knowing, and values formation. The General Motors Foundation funded week-long institutes for faculty from various disciplines to concentrate on writing and talking about writing for five summers at the rate of two or three institutes a summer. Shorter two-hour workshops on campus throughout the school year and a newsletter network for participating faculty have also been established. Classroom strategies emerging from the institutes suggest maintaining teacher and student journals, using essay questions as effective learning tools in lieu of homework problems, and incorporating revisions of formal papers in the classroom structure before final submission. The general pedagogical principle guiding the program is that students learn to write by writing and rewriting often to serve different purposes and different audiences.
Teaching Writing Across the University:  
The Michigan Tech Experience

Paper delivered at the College English Association Meeting,  
March 22-24, 1979,  

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I have been asked to speak to you today on the "writing across the curriculum" experience at Michigan Technological University, and to provide specific details on classroom teaching practices. The genesis of our program occurred about three years ago when actions from teachers outside the English department, supported with evidence from Newsweek, Edwin Newman, Walter Cronkite, and their own sense or nonsense experience, accumulated to the point that English teachers began to dance to Newton's third law and produce the corresponding reaction. The vignettes from that time are familiar to you:

The Mechanical Engineering professor who shares with you that he assigned an essay question on some aspect of carburetors, in which the word carburetor was written in the question, only to have one student misspell carburetor three different ways in attempting to answer the question.

The department head in Forestry who forwards a student letter to you, who had had the letter forwarded to him from the University Placement office, who had received it from an employer, who had received it from one of your student job applicants, who had written it to say she was "sorry" she could not keep an interview appointment.

The biology professor who telephones you to say that he has just received a totally illiterate senior project from a student, whom upon questioning, volunteers that he got a "B" in your freshman composition class.

Needless to say, the concerns of our colleagues in various disciplines were also our concerns. After all, I wasn't sure I could spell carburetor either.
We had a nagging sense of obligation that we ought to be doing something about the "literacy crisis." But instead of accepting the sage advice of our well-meaning colleagues to institute an objectively measured, minimum competency, junior-level achievement test with proper remediation in the English department for those who flunked, we asked ourselves the following question: What are the functions of language in the education of a college student? And while we addressed ourselves to various language uses, we focused particularly on written language. In arriving at some answers to our question we did not develop a coherent theory of discourse, but we were able to identify a philosophical framework which so far has broadened and enriched our concept of written language and one which we have been able to share with colleagues, administrators, and students throughout the University. We have been greatly aided by the writings of contemporary scholars on rhetoric, discourse theory, the reading, speaking, and composing processes, cognitive psychology, philosophy of language—in short all of those who are contributing to what James Kinneavy, Richard Young, and others have labeled the emerging paradigm for composition theory and teaching. At Michigan Tech we have posited that the major functions of writing are: the rhetoric of communication, the rhetoric of self-expression, the rhetoric of knowing, and the rhetoric of values formation. While these four functions of language are not mutually exclusive, or probably even exhaustive, we have found that unless they are segregated so that the unique value of each is recognized and accepted, that the latter three functions are relegated to minor positions in favor of the politically advantageous function of communication, or in the vernacular, the basics.

The first of my functions for written language is the rhetoric of communication—or what James Britton, who has been our mentor in developing the writing across the curriculum program, calls "writing to get things done." He has also
labeled such writing (and the process which creates it) "transactional." This has been the traditional emphasis of most rhetorical texts on expository writing. Persona, purpose, and audience analysis are key concepts that assist us in thinking about the communication process. So is E. D. Hirsch's concept of relative readability, which states that the purpose of transactional writing, he would say all writing, is to communicate meaning in the most time-efficient and cognitively effortless way for a reader to understand the meaning securely. When the major purpose of a piece of writing is to communicate information to a reader, then the rhetoric of communication involves all of the writer's processes and skills with which we are familiar, from invention to editing.

The second function is the rhetoric of self-expression. This is talking and writing to objectify the self's perception of reality—to create, alter, and predict symbols. Britton, working from a theoretical base developed by Suzanne Langer, George Kelly, and Edward Sapir, among others, states that the primary function of language is not to communicate but to symbolize reality in order to handle it. We would like all teachers, not just English teachers, to understand the significance of this point. Expressive writing is that writing for discovery and play, that seeks not primarily to communicate, but rather to order experience.

The third function of writing is the rhetoric of knowing—as when Janet Emig states that writing is a unique way of knowing. Writing is a cognitive as well as a physiological tool for discovering, shaping meaning, and reaching understanding. Martin Nystrand, in his book Language as a Way of Knowing, suggests that "Language plays an instrumental role in facilitating the individual's entry into new experience. It does this by serving to construct and maintain new meanings." As one of his student teachers put it, "The writer becomes aware of many things in the process of writing that would otherwise slip by unseen; the
process of writing is such that one is almost compelled to restructure his experience (p. 99)." Epistemologists Stephen Toulmin and Chaim Perelman have posited that the rhetoric of knowing has replaced the rhetoric of persuasion as the basic paradigm for public communication in contemporary society. We ask all teachers to recognize talking and writing as efforts to know, and to be supportive in nurturing this process.

And fourth, writing is a value forming activity. To Aristotle rhetoric strengthened truth and justice. Contemporary teachers writing in the November '78 issue of the CEA Critic see writing as integral to the development of the democratic concept of the individual. Leo Marx describes how the acts of reading and writing are "highly charged with moral and political consequences." And William E. Coles, Jr. suggests that we "offer the activity of writing to students as an avenue to power, to enable them to understand that an ability to write well is valued and valuable because powerlessness means victimization." It is perhaps this value forming function of writing that needs our most diligent allegiance at the present time. Not only because of the political pressures which minimize the value of the enquiring mind and the stout heart at the expense of communication competence, but because of our own profession's welcomed interest in empirical research, cognitive processes, and the creation of a scientific paradigm. We must remember that this function of writing involves the whole person--his feelings, his soul--her behavior, her character--as well as their mental processes.

The general pedagogical principle that has guided our program is that students learn to write by writing and rewriting, that students should write often, and that their writing should serve different purposes and different audiences. I cannot claim that a person who writes often and well expressively will automatically improve his transactional or persuasive writing, but I do
claim that a student should have an opportunity in a college program to explore the various functions of written language.

Our program at Michigan Tech is teacher-centered as opposed to curricula-centered (require more writing courses) or student-centered (demand specific requirements in terms of uniform competency goals from students). The main thrust of our program is to educate teachers from all disciplines in the functions and processes of language, to provide a framework for assistance with pedagogical strategies, and to provide the follow-up experiences necessary to create a community of teachers continually cognizant of the relationships between language and learning. We wish to construct an environment in which students are frequently provided with the opportunity to use language in a variety of meaningful ways.

The most successful part of the program has been faculty institutes conducted by Toby Fulwiler, director of Freshman English. There have been three, held thus far, each involving fifteen faculty from various disciplines, who were quarantined for two days in a Northwoods lumbering camp, and who gave themselves over to writing and talking about writing for the duration. One purpose of the quarantine was upon return to the general population to make writing and the teaching of writing infectious. Faculty response has been heartwarming if not epidemic. That all writing need not be sterile is a myth that dies hard. These first institutes were held during the school year with each home department picking up the expenses for its participants. Based upon the success of these institutes, we now have received major funding from the General Motors Foundation to conduct week long institutes for the next five summers at the rate of two or three a summer. In addition to covering expenses for staff and accommodations, the General Motors grant provides for an honorarium for all participating faculty. Shorter two-hour workshops are held on campus.
throughout the school year for the participants, and a newsletter network for the exchange of information among participants has been established. Also, English faculty are conducting two-hour workshops with faculty from particular departmental disciplines, in conjunction with institute participants from that department, on language functions and problems unique to that discipline. It is not my intent to give you an account of how the institutes themselves work, but rather to mention some particular classroom strategies appropriate for various disciplines that have emerged from them.

The institute experience not only prepares teachers to assist students to be better communicators, but informs teachers in the uses of language—writing, reading, speaking, listening—but particularly writing, as a tool for students to learn the subject matter of academic courses. That is, they do not become teachers of writing (a catatonic fear!), but by understanding the students' language abilities they learn to provide opportunities for individuals to learn the subject matter better, explore their relationship to it, scrutinize the value of it in conjunction with forming their own values, as well as to communicate effectively to others about it.

Here are a few classroom strategies which fulfill some aspects of the institute's goals.

---Journals. Student journals and teacher journals are appropriate for virtually all courses regardless of section size. Journals can be a place for expressive writing, poetic writing, or pre-writing activities for formal papers. We have prepared and distributed numerous handouts on journal-keeping for faculty and student use. Through the newsletter network we circulate the experience of others, such as this geography professor who wrote:

One of the research tools of recreation geography is observation. By requiring the student to keep a journal of all recreational activity which they either observe or participate in, the student begins to acquire the techniques of scientific observation. In my
instructions to the students for journal writing; I ask that they record their observations of each outdoor recreational activity, their feelings toward that activity, if they are a participant, their motivations if they are a participant and their assumption of the feelings and motivations of others whom they may be observing. From the standpoint of the course, their powers of observation increase rapidly and they develop insights into recreational behavior. At the conclusion of the course, I collect the journals and look through them. I do not grade the journals; but they must keep a journal to pass the course.

Professor Stinson often has sections of a hundred students in recreation geography, and yet he can assign this activity which is not demanding of his time, but which provides a unique learning opportunity for students.

--Essay Questions. The essay question has been a traditional measurement tool in liberal arts courses for decades. Teachers use it because it not only reveals the students' competence in reading the assignments, but reveals whether the student has internalized the meaning, the context, and the value of the subject matter. It demands eating and digesting before regurgitation. Colleagues in various disciplines, including our own, do not give essay tests for two reasons: the sections are too large, or they wish in a short period of time to examine through numerous specific questions the scope as well as the depth of a student's knowledge. Let us give them these reasons. The essay question is too good a device to save for testing situations anyway. The psychologist David Winter in his empirical studies on the value of a liberal arts education affirms that the essay question is an effective learning tool. Why save it for small sections and liberal arts classes? It can be assigned occasionally by the science or engineering professor in lieu of homework problems. A good question can challenge students to assimilate, analyze, synthesize, and such an assignment can be checked quickly when the pedagogical emphasis is on the student learning and not the teacher grading. A provocative student essay—perhaps dealing with the value of science—can be duplicated and shared with the class and a written response solicited from classmates.
When we give a traditional essay test should not students be afforded the opportunity to rewrite essays they do poorly on, especially when we suspect their poor performance was due to confusion in thought and expression and not for want of reading the material? We should provide whatever ongoing pedagogical assistance we can to students whom we ask to respond to essay questions, and not just assume as we frequently do that such writing is an innate and perfected skill.

--Formal Papers. Teachers must realize that assigning grades to formal papers usually concludes the learning process, and that asking for revision, a key ingredient in the composing process, prior to grading generally insures that learning continues. Numerous teachers in various disciplines assign a formal paper due the last week of the term which they grade and sometimes return. There are several ways that revision can be incorporated into the class structure before final submission. The teacher can provide either oral or written comments on a draft, or peer groups can be assembled to critique one another's papers using either in-class or out-of-class time. One Mechanical Engineering teacher at MTU is using both methods, so that the end of the term he receives papers which have gone through at least three drafts.

I would like to conclude by quoting a passage from Errors and Expectations by the late Miña Shaughnessy:

Ways ought to be found to increase students' involvement with writing across the curriculum. This does not mean simply persuading more teachers in other subjects to require term papers but making writing a more integral part of the learning process in all courses. Writing is, after all, a learning tool as well as a way of demonstrating what has been learned. It captures ideas before they are lost in the hubbub of discourse; it encourages precision; it requires, even in the less autonomous work of taking down lecture or reading notes, that the writer make judgments about what is essential, and finally, it lodges information at deeper levels of memory that can be reached by more passive modes of learning . . . (Teachers) can require that students keep efficient class notes or commonplace books or journals and they can encourage in countless ways the habit of writing things down- (but not necessarily 'up' as finished products) (pp. 87-88).