

Development of a Teaching Module on Written and Verbal Communication Skills^{1,2}

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To provide statistical proof of their effectiveness, Language for Learning (LFL) writing strategies used in Writing Across the Curriculum programs were incorporated into a regular verbal communication class. Students taking the communication course in the quarter prior to incorporating LFL served as the control group. Both groups took pretests and posttests evaluating written and verbal communication skills. The major statistical analyses involved comparing the mean of the differences between the control subjects' pretest and posttest scores with that of the experimental subjects' pretest and posttest scores. Results showed that the typical writing apprehension expressed by pharmacy students was significantly decreased for the experimental group. The experimental group showed significant improvement in four dimensions—writing, verbal skills, ability to formulate ideas, and identifying the appropriate target audience. The control group showed improvement in only one—verbal skills. Resultant materials have been made available to U.S. and Canadian schools of pharmacy in the book *Writing Across the Curriculum for Colleges of Pharmacy: A Source Book*.

INTRODUCTION

The profession of pharmacy thrives on the interrelationship between the pharmacist and the patient. This relationship is strengthened when effective communication occurs between the two parties. Much attention has been given to the heightening of verbal communication skills in undergraduate pharmacy education. However, writing skills, though often overlooked, are also of prime importance.

The lack of writing skills is not solely a problem in pharmacy education. Many other disciplines report similar deficiencies in students' writing abilities. In response to students' deficiencies in critical reading and writing skills, universities began developing writing across the curriculum programs over ten years ago. Drawing on a variety of research—Piaget, Vygotsky, Shaughnessy, Berlin, Britton, Flower and Hayes—writing across the curriculum programs emphasize that:

- writing is a skill which must be practiced;
- though each discipline demands similar organizational skills, each has writing tasks and formats which are specific to that discipline; and
- writing visualizes thought and thereby facilitates learning(1).

This last discovery—that the written expression of information expands the learning process—provides the philosophical basis of writing across the curriculum. Therefore, faculty are encouraged to incorporate more writing into their curricula in order to produce not just better writers but critical readers and thinkers. According to Toby Fulwiler, national expert on writing across the curriculum, "The more students write, the more active they become in creating their own education: writing frequently, for themselves as well as their instructors, helps students discover, rehearse, express, and defend their own ideas."(2)

Writing across the curriculum offers positive and concrete solutions to some fundamental problems in undergraduate education: (i) how to engage students actively in the learning process; (ii) how to teach students to think independently and critically about a bewildering array of information and ideas; (iii) how to respond to, evaluate and grade student learning; (iv) how to encourage students to be both individually competitive and socially responsible; and (v) how to create campus environments in which students and teachers learn together as members of what Paul Goodman called "a community of scholars."(2)

The synergistic effect derived from incorporating written and verbal skills in the communication process encourages higher level cognitive outcomes such as synthesis, analysis, and evaluation. According to current research, writing not only serves as a mode of communication, but as a method by which students translate new information into meaningful knowledge. Content area instructors in many disciplines including mathematics and chemistry are using writing to help their students become better learners and thinkers without adding a heavy paper-grading burden to their own workload. Many have become enthusiastic about writing across the curriculum strategies such as Language for Learning (LFL)(3). LFL research strategies used in writing across the curriculum restructures the traditional approach to teacher-centered education by making students responsive to and responsible for communicating, in various ways to various audiences, their understanding of subject matter. Writing across the curriculum strategies are becom-

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² This article was adapted from *Writing Across the Curriculum for Colleges of Pharmacy: A Source Book*, (eds. Holiday-Goodman, M., and Lively, B.) The University of Toledo College of Pharmacy and AACP GAPS (1992).

ing more attractive to English and non-English faculty alike.

While it is beyond the scope of this article to detail the body of current knowledge concerning teaching with writing, it is critical to note that teaching *with* writing is not the same as teaching writing. Teaching with writing is more about writing as part of the process of thinking than about the written product. To the average science professor, it might not be apparent that the "teaching with writing" concept uses writing to generate the thinking. No one advocates sloppy reports, poor grammar, incorrect punctuation, or bad syntax. On the contrary, everyone is held to the highest standards when the purpose of the final written product has the necessity for those standards.

There are many techniques that can be used in incorporating writing across the curriculum. Each can be integrated into the classroom with little intrusion on the time of the professor. Most writing across the curriculum assignments do not require a grade, only some kind of credit for effort. Writing must be stressed as a learning method and as a way of determining how well students understand material. The professors must emphasize the importance of the activity as a method of learning—not a tool for the purpose of evaluating the writer. Examples of possible writing assignments are anonymous questions written to the instructor, microthemes, journal writings, and case presentations or patient information papers. In regard to anonymous questions, students may be encouraged to write questions, observations, or other comments at the end of a class period. These may be reviewed by the professor and selected questions may be discussed during the following class period. This technique serves two purposes: it affords the professor the opportunity to find out if the students are learning, and it gives the students a chance to have their questions answered. Some students have found the answer while writing down the question.

Another example of writing for the classroom involves the use of microthemes written on 3x5 index cards. The student is limited to the space on the card to write on a given topic presented by the instructor at the beginning of class. The time allotted for writing is five minutes. The topic can refer to previous lecture material or the material to be covered in the day's class. Students may be placed into groups to discuss their answers. The topics on the cards can also be used for five- to ten-minute class discussions.

The use of journal writing is another suggestion. A journal can be anything the student wants it to be: a looseleaf notebook, a bound notepad, etc. The students use this notebook to write about anything related to the class. The journal may be divided into sections: one for classroom use (*i.e.*, the assignment is to write for five minutes everyday about what they learned in class), and a section for personal use (*i.e.*, what they have read that pertains to the class). This technique becomes a method for students to examine their own ideas, lecture material, or whatever it is that may be confusing to them.

These journals should not be graded or marked with lots of red ink but treated as conversations. However, it is important to the students that they do receive some kind of credit for doing these. When the journals are to be reviewed, a minimum number of pages are required. However, students are allowed to remove pages they do not wish to share. The grades assigned may be pass/fail or based on a point system. Enough points should be given to emphasize the

importance of the writing. These journals serve as a good reference point for finding out what the class is learning. The journals will highlight issues that have confused people and allow those issues to be cleared up.

Case presentations are another way to introduce writing into the classroom. There are different ways to set up the case presentation. One way is to provide a topic for the day, such as diabetes or hypertension, describing certain signs and symptoms of a patient. The class then writes for the next five to ten minutes on the diagnosis, treatment and social implications of the disease state as it relates to this patient. The rest of the class period dealing with the disease is spent covering all the issues raised, most of which will be on someone's paper in the classroom.

The LFL techniques presented here are only a few of several available ones. Interested professors should use the techniques most appropriate for their courses or even revise techniques to better suit their needs. While the literature does not contain overwhelming empirical data on the effectiveness of writing across the curriculum, much qualitative research in several disciplines supports the belief that learning is enhanced by writing(4-7). This project served to provide essential empirical information on the effectiveness of writing in the learning process.

OBJECTIVES

Although writing across the curriculum has been used in many scientific disciplines, there are little empirical data proving its effectiveness. The purpose of this project was to provide some empirical data on the effectiveness of writing across the curriculum and LFL in the undergraduate pharmacy curriculum. By incorporating opportunities for writing across the curriculum lessons into a regular verbal communication class, first-year professional pharmacy students were exposed to ways to develop their ability to communicate in a variety of modes. The exercises were enhanced by providing review and feedback at the conclusion of each one. The usefulness of the writing component, especially in the reduction of writing apprehension and enhancing attitudes concerning verbal communication skills, were assessed via pretest and posttest evaluations. The results of these evaluations were compared with those of a control group using only the traditional verbal communication format.

Specifically, we wanted to determine:

1. if the average mean scores measuring general verbal and written skills of the control group and of the experimental group were significantly different on the posttest evaluations; and
2. if the mean of the differences between the control subjects' pretest and posttest scores were significantly different from the mean of the differences between the experimental subjects' pretest and posttest scores in specific areas of verbal and written skills.

METHODOLOGY

"Interpersonal Communications" is a three credit hour, required course taught by The University of Toledo's Communication Department specifically for pharmacy students. The students enrolled are first-year professional pharmacy students. Since class size is limited to 35, students have the choice of enrolling in the Fall, Winter or Spring Quarter.

Table I. Course assignments for the control group and the experimental group

Control
<ul style="list-style-type: none">• Reading a text and being able to discuss in class• Role playing in class• No change from the normal communications classroom• Class consisted of lectures, reading and classroom discussion with in-class participation in role playing
Experimental
<ul style="list-style-type: none">• Reading a text and being able to discuss in class• Role playing in class with tutor• Writing in a journal daily (credit given-not graded)• Writing papers for patient information, letters to patients, drug information handouts, and situational assessment (credit given—graded but could be rewritten for a higher grade)

The 1990-91 Fall and Winter Quarter course offerings were slated as the control group and experimental group respectively.

Blinding to prevent student-selection bias was accomplished by *not* announcing prior to the academic year that the course would contain an experimental writing component in one quarter. Thus, students were not aware of this when they planned their quarterly tracking system for the year. Additionally, there was no advisor-related bias in placing these students since the advising function was centralized within the college in the office of the assistant dean for student affairs.

The pretest and posttest evaluations measured perceived performance in 17 specific skills—11 in the writing dimension and six in the verbal dimension. There were also questions on the perceived general ability or improvement in these areas. Demographic and situational information such as age, the number of college courses taken, the number of courses with writing emphasis taken, etc., were included on the pretest. As an indicator of writing ability, an additional item at the end of the pretest and the posttest was a scenario in which the students were to write their response to a particular pharmacy practice situation. The same scenario was used for the pretest and posttest. The pretest and posttest evaluations appear in the manual *Writing Across the Curriculum for Colleges of Pharmacy: A Source Book*(8). This source book has been distributed to all colleges in the American Association of Colleges of Pharmacy. During the control quarter no changes were made in the normal sequence and content of the communications course which met one and one-half hours twice a week for ten weeks. Class consisted of assigned readings, classroom discussion and role playing. Role playing under the supervision of the instructor, who was not a pharmacist, consisted of interpersonal situations that were not health related.

The experimental class was for a ten-week quarter. The three LFL concepts used this quarter were role playing, daily journal writing, and writing various patient information papers (Table I). This latter item emphasized the content in terms of the message—not technical writing skills. Some were microthemes.

The experimental class also utilized a student tutor. Since many of the writing assignments contained pharmacy related information, and the course instructor was not a pharmacist, a University of Toledo postbaccalaureate

Table II. Project research design

Group ^a	Pretest	Treatment	Posttest
Control Group	T _{1C}		T _{2C}
Experimental Group	T _{1E}	X	T _{2E}

DC = Mean of the differences between the control subjects' pretest and posttest scores
DE = Mean of differences between experimental subjects' pretest and posttest scores
Compare DE and DC to ascertain effect of X

^a Normal registration procedures prevented true random assignments by the investigators.

PharmD student served as a tutor for the students in this course. The tutor was assigned to this course as a teaching assistant for ten hours a week. Three hours per week were spent attending the class, assisting in role playing activities, and answering students' questions about clinical aspects of the written case studies. The remaining seven hours were devoted to critiquing the students' written assignments and giving personal feedback to them when necessary. The tutor had an office in the University of Toledo Writing Center for keeping personal appointments with students.

The tutor was trained in LFL concepts by the director of The University of Toledo Writing Center who was a consultant for this project. This enabled the tutor to assist the course instructor in awarding credit for LFL assignments. Many of the scenarios and written assignments used in the experimental quarter were adapted from the work experiences of the investigators and the student tutor, all of whom are registered pharmacists.

Without a control group, an intervention with writing in a communication course, or any course, will more than likely show significant perceived gains in most areas when comparing pretest and posttest results. The design of this project is depicted in Table II. This design was chosen to facilitate the comparison of the mean of the differences between the control subjects' pretest and posttest scores with the mean of the differences between the experimental subjects' pretest and posttest scores from Likert-type scales measuring perceived improvement on a variety of dimensions of general, verbal and written communication.

RESULTS

The comparison of the control group (N=20) with the experimental group (N=28) showed no significant differences based on demographic or situational data. A revealing feature on the pretests, however, was very little writing being required of these students outside basic English courses dealing with writing.

The written problems at the end of the pretest and posttest were reported to be very beneficial by the instructor. Although the written analyses of these problems were not specifically content analyzed, the tutor felt they were good indicators of each student's writing skills. Based on the tutor's expert judgement, the experimental group showed a significant improvement over the control group based on their written analyses of the posttest scenario.

The Likert-type scales, as a group, on the pretest and posttest were checked for reliability using Chronbach's Coefficient Alpha. Alpha was 0.89 for the pretest group and

Table III. Posttest questions

	Not at all		Somewhat		A great deal	
	1	2	3	4	5	
Question One						
To what extent has your writing improved as a result of taking this course?						
Question Two						
To what extent have your interpersonal communication skills improved as a result of this course?						

0.94 for the posttest group. Questions One and Two on the posttest measured perceived improvement in overall written and verbal abilities, respectively (Table III. When comparing the results of these questions on the posttest, the average for the experimental group (3.86) on Question One was significantly higher than that of the control group (2.05) with $t = 8.493$ at the 95 percent confidence level ($t_{cv} = 1.68$).

Although the subjective nature of this question is obvious, the result is important since writing apprehension is in the mind of the beholder. The positive mental outlook exhibited by this class was a desired outcome that is a goal of writing across the curriculum programs.

On Question Two the experimental average (4.53) was not significantly greater than that of the control (4.4) with $t = 0.758$ at the 95 percent confidence level ($t_{cv} = 2.002$). This result is not surprising since the original focus of the course is teaching verbal communication skills.

Parts one and two of Question Ten on the pretest coincide with Question Four and Question Five on the posttest, respectively. These questions focused on specific written and verbal communication skills as seen in Table IV. As noted earlier, the mean of differences between experimental subjects' pretest and posttest scores were compared with the mean of differences between the control subjects' pretest and posttest scores. The control group had no significant differences between pretest and posttest on any of the questions in the writing skills set. However, this same group had significant gains on all questions in the interpersonal communication set. The experimental group likewise had significant gains on all categories in the interpersonal communication set.

Through comparison of mean differences, the experimental subjects were shown to have significant gains on Question c and Question f in the writing set as shown in Table V. They felt a definite improvement in both the ability to think ideas through before writing and actually identifying the appropriate target audience.

On Question 4c the mean difference of 1.1 for the experimental subjects was significantly greater than that of the control group (0.2) with $t = 1.684$ at the 95 percent confidence interval ($t_{cv} -1.680$). Students in the experimental group seemed better equipped to develop a central theme tied to their communication objectives. It is most likely related to the increased level of comfort they expressed on this question relative to thinking their ideas through *before* writing.

On Question 4f the mean difference of 0.9 for the experimental subjects was significantly greater than that of the control group (-0.4) with $t = 2.22$ at the 95 percent confidence interval ($t_{cv} -1.706$). Assessment of one's target audience is imperative in health related situations if the

Table IV. Posttest skill improvement questions

4.	As a result of this course, how much improvement do you think you made in each of the following writing skills?					
	1 = little or no improvement					
	3 = somewhat improved					
	5 = a great deal of improvement					
a.	choosing a topic which motivates me to write	1	2	3	4	5
b.	doing research and taking notes	1	2	3	4	5
c.	thinking my ideas through before writing	1	2	3	4	5
d.	outlining or organizing my paper	1	2	3	4	5
e.	actually sitting down to write	1	2	3	4	5
f.	deciding who is my audience	1	2	3	4	5
g.	saying what I really want to say	1	2	3	4	5
h.	using correct grammar and punctuation	1	2	3	4	5
i.	spelling	1	2	3	4	5
j.	editing and re-writing drafts	1	2	3	4	5
k.	getting papers in on time					
		1	2	3	4	5
5.	As a result of this course, how much improvement do you think you made in each of the following interpersonal communication skills?					
a.	being comfortable meeting strangers	1	2	3	4	5
b.	knowing what to say when a person talks about bodily related functions	1	2	3	4	5
c.	keeping calm/responding appropriately in conflict situations	1	2	3	4	5
d.	asking appropriate questions to get information from people I do not know well	1	2	3	4	5
e.	making eye contact/having good nonverbal behaviors	1	2	3	4	5
f.	listening/understanding underlying messages	1	2	3	4	5

proper communication objectives are to be achieved.

SUMMARY

Although this particular project saw no significant mean differences evolve based on demographic data that were obtained, the pretest demographic data can be very useful in developing class and individual profiles which will be necessary if longitudinal studies are to be done. Additionally, the written case problem at the end of both pretest and posttest provided the instructor with good indicators of each student's writing skills.

The LFL methods used in writing across the curriculum programs facilitated instruction by allowing students to use both writing and speaking as learning tools. As a result, we believe the students gained a better understanding of the interpersonal relationships inherent in pharmacy practice.

The typical writing apprehension expressed by pharmacy students on their pretests was significantly decreased for the experimental group as indicated on their posttests. The experimental group showed significant improvement in four dimensions as opposed to the control group which only improved in one (verbal skills). Specifically, the experimental group showed improvement in:

- writing skills
- verbal skills
- ability to formulate ideas
- identifying the appropriate target audience

Table V. Mean evaluation scores for Question 4c and Question 4f

Group	Pretest	Posttest
Question 4c (thinking ideas through before writing)		
Control	2.5	2.7
Experimental	2.6	3.7
Question 4f (deciding who is my audience)		
Control	2.8	2.4
Experimental	2.9	3.8

The use of a student tutor is, in our opinion, an extremely efficient and effective way to facilitate use of these and other LFL tools in most classes. Based on the advice of our consultants, the use of a tutor who was an advanced student provided significantly more credibility for the whole project with our students than a faculty tutor may have. Additionally, this strategy can enable the expansion of writing components in pharmacy communications and other courses without expanding faculty. The University of Toledo Writing Center, as part of its mission, trains graduate students and others such as adjunct faculty as tutors. The cost to the College of Pharmacy for the tutor for this study was the teaching assistant stipend which was paid from the grant that supported the project.

CONCLUSION

Additional writing in the pharmacy curriculum can help our students gain a better understanding of subject matter. The

number of available, easy to use LFL concepts facilitates the use of writing in almost any course. Especially today, when the move toward complete pharmaceutical care is upon us, a deeper, more personal understanding of information is a must. The power of writing to make obscure concepts more concrete should be harnessed. For many, instructors and students alike, the anticipation of incorporating more writing into the pharmacy curriculum is a bitter pill to swallow. However, it is our belief that writing to learn is the "treatment of choice" for enhanced learning in pharmacy education.

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References

- (1) The University of Toledo Writing Across the Curriculum Program Document. University of Toledo. Toledo OH (1989).
- (2) Fulwiler, T., "Writing across the curriculum: Implications for teaching literature," *Assoc. Departments Engl. Bull.*, No. 88 (Winter 1987) pp. 35-40.
- (3) Bean, J.C., "Microtheme strategies for developing cognitive skills," in *Teaching Writing in All Disciplines*, (edit. Griffin, C.) Josey-Bass Higher Education Series, Washington DC (1982) pp. 27-38.
- (4) Emig, J., "Writing as a mode of learning," *College Composition Communic.*, **28**, 122-127(1977).
- (5) Lantz, J. and Meyers, D., "Critical thinking through Writing: Using personification to teach pharmacodynamics," *J. Nurs. Educ.*, **25**, 64-66(1986).
- (6) Hamilton, D., "Writing science," *College Engl.*, **40**, 32-40(1978).
- (7) Odell, L., "The process of writing and the process of learning," *College Composition Communic.*, **31**, 43-50(1980).
- (8) Holiday-Goodman, M.G. and Lively, B.T. (eds.), *Writing Across the Curriculum for Colleges of Pharmacy: A Source Book*, American Association of Colleges of Pharmacy, Alexandria VA (1992).