ABSTRACT
        The University of Lowell (Massachusetts) conducted a
writing needs assessment in order to help its English department and
department of continuing education systematically formulate a
professional writing curriculum responsive to documented needs.
Questionnaires were mailed to representatives of industries and
businesses in Massachusetts and New Hampshire and to alumni in
engineering, management science, and computer science. Questionnaires
were also given to students and faculty members in these three
fields. Sample results taken from the business and industry
respondents indicated that they perceived writing skills as
"important" or "critically important" in their work performance, and
important in influencing advancement in their fields. In addition,
they valued organization, clarity, and a clear statement of purpose
in writing, and most frequently wrote memoranda, letters, short
reports, and instructions. The entire results of the needs assessment
will be used to help revise present professional writing courses and
formulate objectives for more specialized ones. In addition to
spurring curriculum revision, the assessment yielded significant
increases in alumni interaction, business and industry participation,
faculty development, and university involvement with the community.
(A copy of the business and industry survey instrument is appended.)
(FL)

WRITING NEEDS ASSESSMENT SURVEY:

RATIONALE, LOGISTICS AND SAMPLE RESULTS

Dirk Messelear
University of Lowell

(Paper presented at the annual meeting of the
New England Association of Teachers of English;
Bedford, NH; October 8-10, 1982.)

FOREWORD

The refinement of present introductory technical and business writing courses
and the development of an expanded professional writing curriculum at many colleges
are dependent on a comprehensive needs assessment. These specialized professional
writing courses can be developed largely in response to the needs expressed by
students, alumni, faculty, and most importantly, business and industry. We at the
University of Lowell have, therefore, conducted a writing needs assessment project
which will help Continuing Education and the English Department systematically
formulate a professional writing curriculum responsive to documented needs. This
paper presents a rationale and a design for a writing needs survey, and then offers
some sample survey results.

SUMMARY

The target population for this writing needs assessment survey included: (1)
Massachusetts and New Hampshire industries and businesses, especially those who have
worked with the University's Placement Office; (2) University day school and Con-
tinuing Education alumni in engineering, management science and computer science;
(3) University Continuing Education and day school students in those three majors;
and (4) day school and Continuing Education faculty in these same disciplines.
Needs assessment results will be used to help revise present professional writing
courses and to help formulate objectives for more specialized and expanded Con-
tinuing Education and day school professional writing courses. In addition to cur-
riculum revision, this project—which required a minimal budgetary outlay—
yielded significant increases in alumni interaction, business/industry participa-
tion, faculty development, and University involvement with the community. The
cumulative result of all this productivity should be the increased marketability

and placement of our students in engineering, management science, and computer science employment positions.

INTRODUCTION

Industry, government, and the business world need college graduates who can write. Responding to this need, colleges are, on one hand, developing writing programs for the exceptional student and, on the other hand, demanding competency in writing from all the students. The University of Lowell has responded in both these ways. The recently adopted Core Curriculum establishes "competence in writing the English language" as a standard required of all University students, and the English Department has established a Concentration in Writing for its majors. Moreover, Continuing Education has developed a program in Technical Communications fc ol-lege graduates while expanding offerings in writing for undergraduates.

Essential to the success of these University programs is an awareness of the kinds of writing required in the real world. Technical and business writing instructors must know what communication skills are now demanded by technology and business. Moreover, these same instructors must know how their colleagues in the College of Engineering, the College of Management Science, and the College of Pure and Applied Science are handling written assignments. And it follows, of course, that the Engineering, Management and Science faculty must also know what is going on in both the real world and the English Department. In short, there must be a co-ordinated effort, an interdependent and interdepartmental cooperative endeavor, for University day and Continuing Education students to acquire those writing skills so highly valued in the world today.

There are several strategies available to gather the information this cooperative effort needs: interviewing employers, asking for written specimens from business and industry, reading professional journals, or gathering specific information from survey questionnaires. The survey questionnaire is the most effective for-mat for the proposed writing needs assessment. Used successfully at both the University of Michigan and Miami University, and recommended by every recognized authority in the field, the survey questionnaire provides all the specific data needed to generate professional writing course and curriculum objectives: course preferences, majors, degree levels, employment status, job specifications, em-ployment relative to major, and amount/type/importance of writing done in the classroom and on the job. (It should be pointed out that the survey results are not validly transferrable between universities; that is, the constituencies of

the University of Lowell are different from their counterparts at the University of Michigan.)

Survey Justification

As a survey questionnaire necessarily requires a commitment of both money and people from its university, it must be justified explicitly. The writing survey project will benefit the University in the following five specific areas: (1) relations with business and industry; (2) alumni involvement; (3) student job placement; (4) faculty development; (5) curriculum evaluation and development. Furthermore, in a broader sense, this writing needs survey can make a major contribution to the University, a contribution which moves well beyond the province of writing instruction. As one stage in a decision-making system could be used to evaluate and re-design University courses, this survey could serve as a needs assessment model which could be replicated in other University disciplines.

1. Relations with business and industry. As participants in this survey, business representatives will not only discover the University's commitment to good writing but have the opportunity to contribute to that goal. The survey will open a direct line of communication between the business office and the classroom, between the corporate executive and the teacher.

2. Alumni involvement. Invited to help define the quality of education at their University, alumni will experience a sense of importance, a feeling of community. Their ideas will be respected, their suggestions weighed. They will know they count.

3. Student job placement. Industry, government, and business will recognize that the University's curriculum is responsive to their needs and that University students are graduating with immediately transferrable communication skills. These same three constituencies will be asked to identify what career opportunities they have for skilled writers. This information will in turn provide invaluable assistance to the Placement Office; in fact, the new Placement Director was so supportive of the assessment survey that he has included the questionnaire in his corporate mailing. Finally, students will appreciate their improved career opportunities, value the relevance of their writing assignments, and, accordingly, become better students.

4. Faculty development. University faculty will benefit directly from the survey, especially, of course, those teaching writing courses. However, instructors in disciplines from marketing to mechanical engineering should also discover an increased awareness of the relevance of good writing in

their fields. Moreover, Continuing Education and the English Department plan to use the survey results as a data base for faculty workshops in writing.

5. Curriculum evaluation and development. The survey results will permit a careful reconsideration of the present technical and business writing courses and help to generate more advanced professional writing courses. In addition, the results will contribute to an evaluation of writing assignments in engineering, management, and computer courses. The development of interdepartmental curriculum review would be greatly enhanced by the anticipated sabbatical project of Professor Haber: specifically, to spend a full academic year working with Engineering, Management, and Computer faculty, both day and Continuing Education. The long-range goal in this area is to achieve a University-wide consistency in writing standards; not only to implement the recommendation of the Core Curriculum "to enlist the faculty at large...to improve writing skills," but also to fulfill the larger Mission Statement goal of providing a "liberal arts education both for its own sake and as a major component of professional preparation."

In conclusion, we wish to emphasize that each of the preceding five reasons for justification is a stated Priority Goal of the University as delineated in the Master Plan.

NEEDS ASSESSMENT MODEL

The concept of a replicable model deserves an additional comment. College administrators are continually faced with decisions and, all too often, have inadequate resources for making them. At the University many of these decisions are attempts to reconcile the idealistic goals of the Mission Statement and Core Curriculum with the financial facts of life, the ever-shrinking budget. This writing needs assessment project not only required one of those difficult decisions but, magnanimously, suggests how that decision might be both informed and systematic. Specifically, this project is an integral part of the seven stages in the decision-making process:

1. identification of those University goals served by the project;

2. justification of the project within the context;

3. articulation of project design and strategy;

4. analysis of project results;

5. formulation of academic recommendations;

6. administrative implementation of those recommendations;

7. development of a project budget for the preceding six steps.

ITEMS OF INVESTIGATION

The needs assessment survey was structured to elicit data which can help answer the following questions:

1. What is the relationship between a student's/alumnus academic background, work experience and writing at work?

    1.1 What is the relationship between undergraduate degree (level and type) and the amount and kind of writing done at work?

    1.2 What is the relationship between at student's/alumnus job title/job description/professional status and the amount/ type of writing done at work?

    1.3 What is the relationship between the student's/alumnus length of employment and the amount/type of writing done at work?

    1.4 What is the relationship between a student's/alumnus advancement within the organization and the amount/type of writing done at work?

2. Which writing skills are most important in various career fields?

3. What writing skills and formats are required by various departments in industry and business?

4. What writing skills and formats are required by University of Lowell faculty in engineering, management science and computer science?

    4.1 What is the relationship between the writing skills and formats required by University faculty and those of industry and business?

    4.2 What is the relationship between the writing skills/formats required between various departments in the University?

DESCRIPTION OF RESEARCH PROCEDURE

A needs assessment system for a given set of priority goals involves:

— identification of

    target population and

    areas to be assessed

— development and/or selection of instruments

— administration

— collection and analysis

— reporting of assessment results

TARGET POPULATION AND SOURCES

In general, the target population for this survey encompassed four distinct groups:

> —industry and business
> —alumni in selected majors
> —undergraduates in selected majors
> —faculty in selected departments.

Selected industries from Massachusetts and New Hampshire were targeted. Continuing Education has already programmed the address labels for 2700 Massachusetts industries (as identified by Associated Industries of Massachusetts) and 500 New Hampshire industries (as identified by the New Hampshire Office of Industrial Development). Similarly, approximately 2500 Massachusetts businesses and 500 New Hampshire businesses were targeted as identified through either Moody's or Standard and Poor Publications. The Placement Office sent out information packets to about 500 companies who have recruited through that office in the past. The Director of Placement included the writing assessment survey in these packets (a substantial postage savings for this proposed project). We included any business or industry which has members on University advisory boards or has provided the University with consultants. Department chairmen were a good source for identifying this latter constituency.

The students, alumni and faculty surveyed were either in engineering, management science or computer science. Majors in these three academic areas have the most contact with technical/scientific writing or business writing during their undergraduate years (in the classroom and while working), and after graduation on the job. Alumni were selected from the last five years (1976-1981).

Headcount

The questionnaires were sent out in the following numbers:

	unmailed	mailed	total
day school students	3426		
day school alumni (BA/BS)		5935	
CE students	2286		
CE alumni (AA/BA/BS)		730	
Mass. and N.H. industries		3200	
Mass. and N.H. businesses		3000	
selected U Lowell faculty	110		
TOTAL TARGET POPULATION	5816	12865	18681

Table 1 provides a breakdown of the alumni and student target population by major.

Questionnaire

The business-industry version of the questionnaire is given in Attachment I. The questions are designed to be unambiguous, readily answerable, quantifiable for computer analysis and related to important questions about University technical and business writing courses. In all versions the questionnaire appears reasonably professional, unintimidating and compact. It is important that the questionnaires sent to alumni and industry/business be as aesthetically impressive as funding will allow. However, the questionnaires given to Continuing Education and day school undergraduates and faculty might best be photocopied.

Any one of four cover-letter versions (industry/business, student, alumni, faculty) accompanied the questionnaire, each letter with a salutation and third paragraph tailored to its particular group. (See Attachment II).

Mailing

Three classes of the target population did not require mailed questionnaires: students, faculty and industry/business contacted by the Placement Office. All others were surveys mailed bulk rate using a specially-printed envelope. Each questionnaire was accompanied by a pre-printed, postage-paid envelope in which the respondent can return the completed questionnaire.

COLLECTION AND ANALYSIS

Processing Responses

After the questionnaires were returned, student assistants were assigned a serial number to each. The student then coded the responses from each questionnaire and transferred the coded responses to a computer card which also bears the serial

TABLE 1
PROJECTED SURVEY STUDENT/ALUMNI POPULATION
(Source: 1981 University Fact Book)

	Undergraduate--Day School				Undergraduate--Continuing Education			
		students	alumni (BA/BS)	total		students	alumni (BA/BS)	alumni (AA)	total
Engineering	Chemical	249	188	437					
	Civil	302	218	520	Civil Engineering	101	31	25	157
	Electrical	799	462	1261	Electrical Engineering	569	82	54	705
	Mechanical	594	346	940	Mechanical Engineering	332	64	67	463
	Nuclear	80	110	190					
	Plastics	206	183	389	Industrial Technology Manufacturing Option Waste and Water Option Plastics Option	92	15	15	122
	Industrial Technology	262	209	471					
Management Science	Economics	38	33	71	Management	566	168	100	834
					Accounting	189	35	15	239
	Management	743	760	1503	Banking	141	5	3	149
Computer Science	Computer Science	153	0	153	Information Systems	296	40	11	347
	SUBTOTAL	3426	2509	5935	SUBTOTAL	2286	440	290	3016

GRAND TOTAL 8951 DAY SCHOOL/CONTINUING EDUCATION UNDERGRADUATE AND ALUMNI

9

10

number. (The serial number makes it possible to check for and correct coding and keypunching errors.)

Data Analysis

1. _Department by department._ A separate analysis of the results of each department will define the writing experiences and needs of students and graduates by major. Most specifically, the analysis will aid in the revision and expansion of introductory professional writing courses and the institution of interdisciplinary writing assignments in engineering, management science and computer science courses. The analysis of data for each department will involve two distinct activities: first, a summary of results for all students within each department and then a grouping of respondents into subgroups so that: -- responses from students can be compared with those from alumni

    -- responses from alumni and students can be compared with those from employers

    -- responses from employers can be compared with those from University faculty

2. _All respondents._ The survey from all the respondents taken together will provide the information most useful to administrators and faculty responsible for evaluating and refining professional writing courses and articulating coordinated writing assignments in management, computer science and engineering.

Statistical Analysis

Using the Statistical Program for the Social Sciences (SPSS), four kinds of statistical tests were applied to analyze the data in the ways just described:

T-Test to compare the responses that two groups of respondents give to a single question.

Paired T-Test to compare the responses that a single group of respondents make to a pair of questions

Analysis of Variance to make either of the following comparisons:

    -- comparison of the responses to three or more questions
       to determine if there is a statistically significant
       difference among them (for example, to see if there is
       a statistically difference among the responses about
       how often respondents prepare various forms of communication).

    -- comparison of the responses that three or more groups
       of respondents made to a particular question (for
       example, to know if there is a significantly signifi-
       cant difference among the amounts of time at work that
       the various departments spend writing).

Duncan's Multiple Range Test for Variable Response: when an analysis of variance indicates that there is a statistically significant difference among a group of respondents.

SOME SAMPLE RESULTS

The significant data yielded from a writing needs assessment survey can best be evidenced by reporting some specific results. By way of example, the business-industry survey yielded respondent characteristics, the value of writing, a writing skills priority and format frequencies.

Characteristics of Respondents

Job Titles. The preponderance of respondents were administrators who are in the best position to assess the writing competencies required of company employees. As displayed in Table 2, over two-thirds (67.6%) of the respondents classified themselves as personnel directors (managers) or managers (administrators). This does not include the 13% of respondents who classified themselves as either a president or vice-president of a company--top level executives.

Table 2. BUSINESS - INDUSTRY WRITING SURVEY

JOB TITLES	%	No.
Director or Manager of Personnel	39.9	144
Manager/Administrator	27.7	100
Vice-President	9.1	33
Administrative Assistant	5.5	20
President	3.9	14
Recruiter	3.0	11
Engineer	1.4	5
Other	9.4	34
Blank		1
	100	362

Company Classifications. As might be expected from a survey sampling of a geographic area with one of the world's greatest concentrations of high-technology industries, almost one quarter (24.1%) of the responding companies fell in the high tech areas: electronics-electrical (19.3%) and aerospace (4.8%). Although business (banks 14.1%, communication 2.3%) also constituted a significant part of the sampling who responded, industry easily contributed the largest share of the sampling (including machinery, chemicals, metals, autos, textiles and containers).

TABLE 3. BUSINESS - INDUSTRY WRITING SURVEY

(LARGEST) COMPANY CLASSIFICATIONS	%	NO.
Electronics-Electrical	19.3	60
Banking	14.1	44
Machinery	12.2	38

12

	%	NO.
Chemicals	7.4	23
Metals-Nonferrous	5.1	16
Aerospace	4.8	15
Auto-Auto Parts	3.5	11
Health Care	3.2	10
Textiles	2.6	8
Containers	2.6	8
Communication	2.3	7
Blank		51
Other	22.9	71
	100	362

The 362 area companies who responded included many of the largest firms in New England. On the average, they each employed 112 engineers, 94 managers, 30 human resource personnel, 53 computer personnel and 14 technical writers. The spokesman for these companies appears to speak for among the largest consumers of college-trained professionals; therefore, these companies' writing skill and format requirements certainly merit academia's attention.

General Writing Importance. As might be expected, the average responding company indicated that general writing skills ranged in importance from "important" to "critically important," with respect to both general importance and effect on advancement. However, there is a significant difference in the general importance and advancement affects of writing skills for the four professional categories rated -- engineers, managers, computer, personnel and human resource personnel. Rank-ordered, they appear as follows:

general importance	advancement
human resource (4.32)	human resource (3.87)
managers (4.32)	managers (3.80)
engineers (3.80)	engineers (3.43)
computer personnel (3.23)	computer personnel (3.0)

It appears, then, that companies generally rank order the four professions identically with respect to their relationship to both importance of general writing and importance to professional advancement. However, writing is perceived as having less influence on advancement than it has on general work performance.

__Writing Skills Priority.__ Given a set of twelve writing skills, responding businesses and industries prioritized these skills as follows:

TABLE 4. WRITING SKILLS PRIORITY - ALL PROFESSIONS

RANK	MEAN RATING	SKILL
1	4.25	Knowing how to organize
2	4.23	Writing clearly
3	4.20	Clearly stating purpose
4	4.09	Writing concisely
5	3.98	Using acceptable grammar
6	3.94	Using appropriate spelling, punctuation, tone of voice
7	3.85	Selecting information readers need
8	3.76	Instructing tables & graphs
9	3.72	Writing persuasively
10	3.72	Other
11	3.63	Understanding readers' attitude
12	3.45	Using visual aids

It is clear from these responses that business and industry value organization, clarity and a clear purpose statement in its writing. They value less the use of visual aids and understanding the reader's attitude.

Beyond this general ranking, there is a clear agreement of these eleven skills relative to the importance for engineers and computer science personnel as opposed to managers and human resource personnel. (See Table 5.)

TABLE 5. WRITING SKILLS PRIORITY - BY PROFESSION

Rank	Engineers	Computer	Manager	Human Resource
1	12	11	4	4
2	8	8	8	6
3	6	4	6	8
4	4	6	7	11
5	7	7	10	10
6	10	12	9	7
7	5	10	5	9
8	14	5	11	5
9	13	14	14	3
10	9	3	3	14
11	3	9	12	13
12	11	13	13	12

Key:
3. Attitude
4. Organize
5. Information
6. Purpose
7. Concise
8. Clear
9. Persuasive
10. Grammar
11. Tone
12. Tables
13. Visual Aids
14. Other

For example, managers and human resource people both valued organization and persuasion (both skills taught in conventional composition courses) and devalued the use of tables considerably more than did their engineer and computer science counterparts. The companies considered all the remaining skills equally important or unimportant for all four professional categories (except the importance of tone of voice which evidenced a random distribution across the four professions).

Most important writing skills. When asked to rate the one most important writing skill, almost half of the company representatives (47.6%) perceived "knowing how to organize" as the most important writing skill. Although much less important, other skills seen as consequential included "clearly stating purpose to reader," "writing clearly," and "selecting the information readers need." It is interesting to note that relatively few professionals viewed "using acceptable, grammar, spelling, punctuation" as the most important writing skill.

Format Frequency

When given 13 of the most common writing formats and an opportunity for other suggestions, company representatives were asked to rate on a five-point differential the frequency of each format's use ranging from "never" to "very often." The given formats were ordered as follows:

> Memoranda
>
> Letters
>
> Short reports (1-5 pages)
>
> Instructions
>
> Proposals (in-house)
>
> policy statements
>
> Long reports (6 or more pages)
>
> Proposal (clients)
>
> Minutes
>
> Scripts
>
> Articles
>
> Advertising
>
> News releases

Again, similar to the close correlation of writing skills to profession, engineers and computer personnel, on the one hand, and managers and human resource personnel, on the other hand, seem to use the varying formats with similar frequency. Managers and human resource personnel tend to use letters, policy statements and minutes of meetings more than the other two professions surveyed.

Conversely, engineers and computer science personnel tend to use more instructions, scripts for speeches or presentations, and advertising or promotional materials.

Conclusion

A writing needs assessment survey is of minimal cost to a university, yet yields significant, long-term benefits: public relations, job placement, faculty development, interdisciplinary writing systems, improved course design, student motivation and publication. The tentative results of the University of Lowell's writing survey of New England business and industry concretely illustrates the value of surveys in academic decision making and, specifically, in designing professional writing courses.

University of Lowell
One University Avenue
Lowell, Massachusetts 01854

Continuing Education

17).452-5(XX)

March 16, 1982

Dear Industry or Business Representative:

As part of its commitment to improve the quality of student writing, the University of Lowell invites your participation in some crucial curriculum revision. This curriculum change can help us meet your particular company's needs; your help can ensure that our students graduate with immediately transferable communication skills.

The Division of Continuing Education is working with the University's Engineering, Management Science, Computer Science and English departments to learn how much and what kinds of writing University of Lowell graduates will do in their professional careers. The results obtained in this survey will be used to advise us about the kinds of writing the University of Lowell should teach in its technical/scientific writing and business writing courses, and to determine if other, more specialized courses should be introduced during the day and evenings.

You can help by completing the enclosed questionnaire and then returning it in the postage-paid envelope. Because we want the results to be as accurate as possible, we are especially hopeful that you will respond.

Of course, your answers will be kept confidential and will be reported only in statistical summaries of the overall results of the survey.

If you would like to receive a free report on the findings of this research, just write your name and address at the end of the questionnaire, or if you prefer, request the results of the University of Lowell Writing Survey in a separate letter to the Division of Continuing Education.

PLEASE RETURN THE ENCLOSED QUESTIONNAIRE at your earliest convenience, but no later than April 19. Thank you for your help.

Sincerely,

Dr. Dirk Messelaar
Assistant Director of
Continuing Education

DM:mm
Enclosure (1)

University of Lowell
Industry-Business Writing Survey

BACKGROUND

Your Title _____

Company Name _____

Address _____

Company Classification (* Give Code Number — See Below) _____

Approximate Number of Employees Who Can be Classified as:

Engineers _____   Computer Personnel _____

Managers _____   Technical Writers _____

Human Resource _____

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* BUSINESS-INDUSTRY CLASSIFICATION

Use the following business and industry coding system to identify your place of employment on the questionnaire

1 Aerospace	8 Chemicals	15 Insurance	22 Oil - Gas Drilling and Service	27 Rubber Fabricating
2 Air Transport	9 Communication	16 Investment	23 Paper	28 Steel - Coal
3 Apparel	10 Containers	17 Leisure - Time	24 Railroads and Equipment	29 Telecommunications
4 Auto - Auto Parts	11 Electronics - Electrical	18 Machinery	25 Retailing (department, mail order, variety, drug chain)	30 Textiles
5 Banking	12 Food Processing	19 Metals - Nonferrous	26 Retailing - Food (supermarkets, restaurants, food service)	31 Trucking
6 Beverage and Tobacco	13 Health Care	20 Office Equipment		32 Utilities - Electric
7 Building	14 Home Furnishings	21 Oil		33 Utilities - Gas

Note Human Resource Personnel typically include liberal arts graduates working in Employee Training, Counseling, Organizational Development, Personnel Office, etc

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DIRECTIONS

DO NOT USE CHECK MARKS!

Use a Number 1 to 5 for Each Block In Questions 1 Through 14.
Values 1—Unimportant (would be of no help)
2—Not Very Important (would be of little help)
3—Important (would help somewhat)
4—Very Important (would help greatly)
5—Critically Important (would be essential)

Use Numbers 1 to 5 to Answer Questions 18-32
Values 1—Never
2—Rarely
3—Sometimes
4—Often
5—Very Often

GENERAL WRITING IMPORTANCE

	Personnel			
	Engineers	Manager	Computer	Human Resource
1. How important is the ability to write well in your company?				
2 What effect does the ability to write well have on advancement?				

WRITING SKILLS PRIORITY

How important are the following skills for college graduates entering your company?
(Use the same 1-5 scale)

	Engineers	Manager	Computer	Human Resource
3 Understanding reader's attitude				
4. Knowing how to organize and communicate				
5 Selecting the information readers need				
6 Clearly stating purpose to reader				
7 Writing concisely				
8. Writing clearly				
9. Writing persuasively				
10. Using acceptable grammar, spelling, punctuation				
11. Using appropriate tone of voice				
12 Knowing how to construct tables & graphs				
13. Knowing how to use visual aids				
14. Other (please specify)				

Of the writing skills listed above (including any you may have added) rank the three that you think are most important for college graduates entering your company (therefore, use only numbers 3 through 14).

	Engineers	Manager	Computer	Human Resource
15.	(1)	(1)	(1)	(1)
16.	(2)	(2)	(2)	(2)
17.	(3)	(3)	(3)	(3)

WRITING FORMATS

How often do your personnel use the following kinds of communications?

	Personnel			
	Engineers	Manager	Computer	Human Resource
18. Letters				
19. Memoranda				
20. Short Reports (1-5 pages)				
21. Long Reports (6 or more pages)				
22. Proposals (In-house)				
23. Proposals (To customers or clients)				
24. Step-by-step Instructions/Procedures				
25. Policy Statements/Guidelines				
26. Minutes of meetings				
27. Articles for professional journals				
28. Scripts for speeches/presentations				
29. Advertising or promotional material				
30. Feature articles or news releases				
31. Other (please specify)				
32. Other				

EMPLOYMENT PROJECTIONS

	Engineers	Manager	Computer	Human Resource
33. Do you anticipate additional hiring needs within the next three years for (yes or no)......				

SUGGESTIONS

On the Reverse Side Indicate —

34. Titles of writing courses ULowell should offer

35. Suggestions for helping our writing courses meet your company's needs.