Teaching Persuasive Writing Skills Using Proposals and Cover Letters

Elisa Linsky, Gunter Georgi.

Polytechnic University, Brooklyn, New York.

Engineers and Scientists are trained to present information as objectively as possible. While this is critical in the preparation of lab reports and in the dissemination of experimental results, technical professionals are often called upon to write persuasively. How do we teach our students to remain objective and still convince their readers that their idea, product, or solution is the best one?

In EG 1004 Introduction to Engineering and Design, the preparation of lab reports has been taught for a number of years. Recently, other forms of Technical Communication have been introduced. These include: technical presentations, software documentation, and proposal writing. To introduce the fundamentals of persuasive writing, our students respond to an RFP and prepare a funding proposal for a fictional organization. This semester, the assignment has been refined to include the preparation of a cover letter for the proposal.

This paper will discuss teaching the skills necessary to produce good persuasive writing in a scientific or technical context. The differences in student writing when a full proposal is assigned to the writing produced when just a cover letter is assigned will be discussed. Particular attention will be paid to introducing these skills without eroding the preparation of objective writing.

Introduction

Engineers and scientists are called upon throughout their careers to write persuasively. They frequently have to sell the reader on some idea by outlining a convincing solution to a problem. In EG 1004, Introduction to Engineering and Design, the preparation of lab reports is the featured writing assignment. The mastery of this rhetorical exercise is critical to our student's success, but what about the persuasive writing situation? The lab reports they write are completely objective documents, even constructed in the passive voice to de-emphasize the person executing the experiment and focus on the action taken.

The introduction of persuasive writing skills into the technical writing component of EG 1004 has been accomplished by taking advantage of the course's semester long design project as a vehicle for instruction. By asking students to prepare a proposal, the instructional team is able to teach the fundamentals of persuasive writing within the context of a bona fide selling opportunity.

We were aware that there was a risk of diluting our ability to help our students master the preparation of lab reports by assigning a proposal, but we thought the necessity of teaching
Teaching these skills in an engineering course affected our instructional decisions. Proposal writing in an introductory technical writing course is usually a standard part of the curriculum. The instructor has ample time to lecture on the topic and offer a number of opportunities for students to practice the form. In EG, the writing consultant has a limited amount of teaching time. To address this fact, we decided to refine and simplify the assignment to allow us to get to the fundamentals of teaching persuasive writing quickly.

**Background**

EG 1004, Introduction to Engineering and Design, is Polytechnic University's introduction to selected aspects of the history, philosophy, methodology, tools, and contemporary topics in engineering. It includes a weekly lab component that introduces basic engineering experimentation and data analysis. The course is composed of a weekly three hour lab, a two hour recitation and a one hour lecture.

In the spring of 1998, with Gateway Coalition support, an applied writing component was added to the existing EG program to help students develop the writing skills needed in the technical professions. A writing consultant is assigned to each section. They design the writing curriculum, provide weekly instruction in a selected writing topic, and grade student work for written expression.

Students are assigned four types of professional written communication in EG: Lab Reports, Software Documentation, PowerPoint Presentations, and a Proposal. Each of these assignments is intended to provide students with a sample of the type of written work that is required of technical professionals.

For the final, semester-long, design project, our students are asked to either: build a robot to accomplish one of three complex tasks, design and program a guidance system using digital logic to safely direct trains along a section of track, or to design a supermarket, with power, heating, and refrigeration specifications, including a scale model and a three dimensional drawing using Auto Cad. During the course of the semester, the student teams present three milestone reports documenting their progress, and a final presentation and proposal, in which they pitch their project to a prospective buyer.

**Teaching Persuasive Writing**

Writing effective proposals is a critical skill for all technical professionals. Convincing someone that your idea is the best one to solve the problem they face is fundamental to a successful career in science or engineering.

The difficulty in teaching this proficiency is the tendency among our students to focus on selling and not on developing a credible, logical argument based on evidence. They tend to focus heavily on the *features* of their product, failing to understand that *benefits* are more important to
their readers. In an attempt to establish their own credibility, they tend to just say that their firm is the best one for the job, not realizing that that may not be the best way to establish trustworthiness and reliability.

To address these issues, we start by focusing on the purpose of a proposal: the attempt to convince the reader to do something. Our guidelines for preparing the final proposal remind our students that their first job is to state the problem. They frequently wonder why this is necessary; assuming the reader already knows the problem since they have solicited responses. We show them that this is not necessarily the case. The client may not understand the complexity of the problem, or what is required to address it. We teach our students that stating the problem clearly, allows them to report on the scope of the work to be done and demonstrate credibility by showing an understanding the problem.

They are then instructed to offer their solution to the problem. They often have difficulty demonstrating the viability of their solution. They must be reminded to present evidence in support of their proposal.

Finally, they are taught to show they are capable of implementing the proposed solution. To demonstrate that they possess the skills and resources necessary to complete the task at hand, they are encouraged to create a realistic scenario that presents evidence of the successful completion of another similar project. It is always necessary to remind our students that they must remain credible. They are quite capable of coming up with claims that they designed the Mars Rovers or the Hubble Telescope. It is also important to emphasize that just saying you are the best people for the job doesn't make it so. We must remind students that credibility is established through the mastery of the subject at hand.

**RFPs, Proposals and Cover Letters**

Initially, this assignment was a full-blown report that was a hybrid lab report/proposal. This proved confusing for our students. They found it difficult to adjust to a persuasive writing style while restricted to the same format they had used all semester for the preparation of their lab reports.

The writing consultants were able to convince the technical faculty that our proposal assignment needed modification. They agreed and supported the creation of a Request for Proposal (RFP) for each of the final projects. (See Appendix A for a sample RFP) These documents provided the context missing in the previous assignment. Our students now had a clear audience and purpose for their writing.

Next, we redesigned the format for the document to better reflect one typical for proposals. It included a cover sheet, a client summary, an introduction, the scope and format, features and benefits, development and delivery, a budget, data, and a conclusion. We created a sample proposal for them and also instituted the preparation of a draft at mid-semester to allow for revisions to the final proposal. This gave us an additional, much-needed, teaching opportunity.
The proposals produced were much better. They were professional and persuasive and didn't suffer from the hybrid nature of the previous work we had seen. However, we still felt that the assignment was too wide-ranging, and that it would be more productive to focus directly on persuasive writing skills alone.

In a meeting at the end of the Spring 2004 semester, Robert Kole, one of our writing consultants, suggested we assign a cover letter for a proposal instead. All present agreed that this was worth a try. That summer, Stephen Haggerty, the writing consultant for the summer session developed the assignment and supporting materials and piloted it in his section.

The results were encouraging. Our students were more focused and seemed to grasp the fundamentals of persuasive writing better and more completely than they had when writing an entire proposal. Their arguments were clear and coherent, and used evidence to support their claims. We decided to try the final proposal cover letter in all our sections in the fall of 2004. (See Appendix A for the guidelines we use.)

Conclusion

The Final Proposal Cover Letter has proven to be the best way we have found to teach persuasive writing skills in an engineering course. The assignment is focused enough to allow us to concentrate on getting our students to state the problem, propose a viable solution and establish their team's ability to implement the solution.

The successful execution of this assignment over all 15 sections of EG this fall has convinced us of its viability. Paring down the requirements helped our students to understand what was essential. Adding context by preparing an RFP for each of the projects and instituting a draft at mid-semester also proved invaluable.

We continue to seek ways to introduce the fundamentals of good technical writing to our engineering students in EG 1004 with the goal of improving their ability to communicate their ideas effectively.

ELISA LINSKY, Instructor, Undergraduate Advisor -Technical Communication Program, is coordinator of the Writing Program for EG 1004.

GUNTER W. GEORGI
Gunter W. Georgi is an Industry Professor at Polytechnic University. He received his BS from Cooper Union and his MS and professional M. E. Degrees from Columbia University. He is a registered Professional Engineer. He has worked for many years in the aerospace industry in design, analysis and management functions, including Thermal Mission Analysis of the Lunar Module from Apollo Project.
Appendix A: Sample RFP, Sample Guidelines, Sample Template

RFP
Supermarket Design

INTRODUCTION AND OVERVIEW
Downtown Brooklyn is experiencing a renaissance. Polytechnic University spearheaded the first leg of this resurgence over 20 years ago when it proposed an urban renewal project designed to develop a Metropolitan Technology Center in Brooklyn.

Now known as Metrotech, the area has been transformed. It features new construction that houses Keyspan Energy, Chase Manhattan Bank, Bear Sterns, SIAC, Empire Blue Cross / Blue Shield, and other corporate heavyweights. The city has recognized Metrotech’s success and intends to expand on it.

Since 9/11, Manhattan-based companies have had to add back office space outside of that Borough in order to prevent the catastrophic effects another terrorist attack could have on their businesses. The City, driven by the desire to keep these companies in New York, is planning a massive Downtown rezoning and redevelopment plan for Brooklyn. The plan would allow for the construction of 6.7 million square feet of office space, 1 million square feet of retail development, 1,000 housing units and 2,500 parking spaces.

Retail giants like Target, which just opened a store in the new Atlantic Terminal Mall on the corner of Flatbush and Atlantic Avenues, and Ikea, whose plan for a location in Red Hook has just been approved by the City Planning Commission, are moving to the area. There is even a proposal by the owner of the New Jersey Nets, Bruce Ratner, to move the team to a proposed site in Downtown Brooklyn called The Atlantic Yards.

But despite all this activity, there is still a dearth of supermarkets in the area. Operating on the theory that all these people must eat, Whole Foods, the Austin, Texas based natural and organic food giant, is building a 52,000 square foot store south of Park Slope. However, this site is still some distance from the heart of Downtown Brooklyn.

Our company, Poly Foods, Inc., is launching a design competition for our new location on Jay Street. Right in the heart of Metrotech, this site had enormous potential. The right design concept will guarantee success.

Your plan must be innovative. The winning proposal will be the one that incorporates a bold scheme for the space that combines solid engineering with a broad vision of the future of food retailing. The architectural ideas embodied in your plans must be discussed fully. Your proposal should include information on your company and its lead developers with at least one reference to a previous commission.

Please refer to the specifications that follow as you prepare your proposal. The format outlined in the Technical Communication section of this manual is the one you should use.

Good Luck
Writing effective proposals is a critical skill for all technical professionals. Convincing someone that your idea is the best one to solve the problem they face is fundamental to a successful career in science or engineering.

Proposals are an example of *persuasive writing*. Their success depends upon your ability to convince the reader to do something. First, you must identify the problem to be solved. You may think you are exempt from explaining the problem because the reader has solicited responses by preparing an RFP and must therefore know what the problem is. This is not the case however, they may not understand the complexity of the problem, or what is required to address it. By stating the problem clearly, you report on the scope of the work to be done and demonstrate your credibility by showing that you understand the problem.

Next you must offer your solution to the problem. Make sure you demonstrate the viability of your solution. It is important to present evidence in support of your proposal.

Finally, show that you are capable of implementing the proposed solution. Does your company have the skills and resources necessary to complete the task at hand? One of the best ways to show this is to present evidence of your successful completion of other, similar projects.

Traditionally, persuasive language seeks to activate three responses in a reader:

1. Ethos (ethical response): While having good ethics is one way to create a feeling of ethos in the reader, doing the right thing is only part of it. Ethos is aroused in clients when they feel respect for the writer and trust that the writer is competent to complete the assignment. You can create a sense of respect when you demonstrate a thorough understanding of the issues that face the client. In addition, a client trusts a proposal that is precise and professional, uses engineering principles to describe the solution and offers proof beyond simple assurances that your design is best. Coming up with a good design is only the first step; clients will receive many good designs that meet the minimum specifications. In order to make a contract decision, clients will look for a team that demonstrates general design competence so that they are sure that the job will be done well and that the team will be able to adapt to changes in the client’s needs or problems that come up during production.
2. Logos (logical response): Clients feel a sense of logos when the proposal is structured in the form of a logical proof. By creating a clear sense of the client’s need, including what difficulties are in the way of a solution, the proposal sets up an expectation in the reader. Logos is achieved when the information in the report leads the reader from the problem to the proposed solution. When evidence is presented that supports the idea that the proposed solution is correct, and that evidence is patiently explained by the writer, readers feel a sense of logos. Simply presenting evidence without explanation, or making random observations without an overall argument, will not achieve logos. Logos results when a writer demonstrates that a solution makes good logical sense in relation to one specific problem.

3. Pathos (emotional response): While your report should maintain a professional and objective tone that does not mean that you should not seek to create an emotional response in your readers. Using descriptive words and adjectives is one way to achieve pathos. Another way is to tie the project into larger concerns, such as the overall health of the client, humanitarian or social needs, or the need for innovation in a competitive marketplace. Pathos must be carefully targeted to your perception of the client. If the client is a large corporation, ideas of efficiency and savings might excite feelings of pathos. If the client is a consumer, however, issues of quality and safety might be better. Remember that there is plenty of crossover potential: if you think that a client’s primary concern is cost savings, for instance, you may be able to generate a feeling of pathos by reminding the client that there are human beings involved in the process as well. Sometimes the most effective way to create an emotional response is to embrace the unexpected.

When writing a proposal, it is essential to seek these three feelings in balance. Figure 1 demonstrates the effect of proper balance.

*Figure 1: The Range of Client Responses to Persuasive Language*

<table>
<thead>
<tr>
<th>Response</th>
<th>Too high</th>
<th>Too low</th>
<th>Just right</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethos</td>
<td>The writers are overconfident or arrogant.</td>
<td>The writers lack expertise and the project will fail.</td>
<td>I trust the writers’ abilities to complete the project.</td>
</tr>
<tr>
<td>Logos</td>
<td>The writers are out of touch with the real world.</td>
<td>The design has nothing to do with my company.</td>
<td>This is the right proposal for our company today.</td>
</tr>
<tr>
<td>Pathos</td>
<td>The writers are trying to manipulate me; or, the writers lack substance.</td>
<td>The writers are not enthusiastic; or, the proposal does not move me to action.</td>
<td>This is the proposal that will satisfy my needs. I must choose this team.</td>
</tr>
</tbody>
</table>
In EG we are responding to a solicitation for a proposal. Someone has asked you to write this document and has identified the problem. It is implicit that they have also decided to try and solve the problem.

Proposals typically have a format like this:

1. An introduction that states the purpose of the proposal, the problem that needs to be solved and the scope of the work planned.
2. A discussion section that describes the proposed solution, explains how the solution will be implemented, and lists the tasks to be accomplished.
3. A resources section that lists who will do the work and what materials will be required.
4. A costs section that includes how much money and time will be needed to finish the job.
5. A conclusion that summarizes the proposed solution and tells the reader who to contact for more information.

Your assignment is to prepare a cover letter for a formal proposal. Sometimes called a Transmittal Letter, the purpose of this document is to summarize the subject and purpose of the proposal, state the reason for preparing the document, and emphasize any information that is of special interest to the reader.

Remember, just saying that your firm is the best one for the job is not the best way to establish credibility. You become credible when you accurately describe the problem and offer a solution. Credibility is established through your mastery of the subject you are discussing. While it is important to include references to other projects you have done that are similar to this one and to document your expertise, establishing a confident, professional, persuasive tone in your writing will go a long way toward convincing your reader of your abilities.

**Please note:** You will not be writing the actual proposal, just the letter that will accompany it.
Sample Template:

[HEADER--Insert your company name and logo]

[INSERT DATE]

Mr. Joe Smith, [Title]
[Company Name]
[Street Address]
[City, State, Zip]

RE: [Project Name]
[Project Specifications, i.e., Robot for Bomb Disarming Project]

Dear Mr./Ms./Director [INSERT CONTACT NAME]:

This is the name and address of the contact person and company you are sending your proposal to.

Always use a colon in formal salutation.

1ST PARAGRAPH

Introduce your company and the proposal you are responding to. Briefly state the problem described in the RFP for your project. Make sure you demonstrate your understanding of the problem. Now, briefly state--using persuasive language--your solution to the problem. Explain why your company is the best choice for the job.

Example: [Insert your company name] is pleased to submit our Proposal in response to your [insert name of project proposal you are responding to].

2ND & 3RD PARAGRAPHS

Now, describe the problem in more detail. Explain your solution, emphasizing your design innovations and any original thinking about solving the problem.

In the 3rd paragraph, provide a detailed description of your project and how it answers the specifications of the RFP. You also need to include both mechanism (e.g., the robot itself) and process (e.g., how the robot works) descriptions.

Examples: Building an autonomous robot to disarm bomb keeps first responders out of harm's way...Our firm has designed an innovative touch sensor to....The robot is 13 inches tall and has four wheels....Using state-of-the-art programming tools...
4TH PARAGRAPH
Briefly describe your company, your team's specific qualifications and the goal(s) you will meet. This is where you are going to argue persuasively that your company is the one best suited to meet the needs of the current proposal. Be specific about what your company’s strengths are.

Examples: Our firm has developed over its seven year history...We are uniquely positioned to...Our firm's location in Lincoln, Nebraska...

5TH PARAGRAPH
Talk about a past project (or current projects) that your company has undertaken. Highlight the ways you have met other project specifications and guidelines. Be creative but NOT outrageous in describing other fictional projects. This part gives a short but important history of your successes for the potential client.

FINAL PARAGRAPH
In two or three sentences, mention again the proposal name you are bidding for, concisely focus again on the problem, your solution and what your company can bring to the project. Make sure you express your strong interest in working on this project. Provide contact information.

Example: The [insert your company's name] team has worked on numerous projects and carefully reviewed your guidelines--we know your procedures. The [insert company name] team can bring available experienced staff... We look forward to the opportunity of working with you.

Sincerely,

David Poly
Lead Engineer

Jane Jay
Project Manager

INSERT YOUR NAMES AND TITLES
Below your names, you will write "ENCLOSURE," which refers to those items that you will attach to this cover letter. Normally, the Proposal with an Appendix would be attached here to the cover letter. YOU ARE NOT WRITING A PROPOSAL. However, YOU DO HAVE TO ATTACH AN APPENDIX. Include: Your initial sketch, all the drawings of your final design, the final RoboLAB program, the final MS Project, and the final cost estimate. Be sure to include photographs of your model. In addition, describe, in complete sentences, your Production Contract Considerations.

AGAIN, you are just writing a cover letter and attaching an appendix with supporting documentation.