

WRITING FOR THE YEAR 2000

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Abstract

In this paper, I describe a two-day training course in written communication for COBOL programmers on a year 2000 compliance project.

Keywords

Training course, written communication, Year 2000, programmers

1. Introduction

Many of the computer programs threatened by the "millennium bug" were written in COBOL, a programming language popular for writing business applications in the 1960s and 1970s. Since COBOL has gone out of fashion, finding COBOL programmers to make these applications year 2000 compatible has been difficult. Rather than seek out trained COBOL programmers to staff its year 2000 compatibility project, Decision Consultants, Inc. (DCI) decided to hire recent computer science graduates and teach them COBOL. Unlike most contemporary programming languages, COBOL is very English-like, and most COBOL code contains lengthy written remarks describing how the program works. Correcting COBOL code requires modifying and adding to these remarks, but today's college graduates are notoriously weak in written English expression.

To alleviate this problem, DCI planned to offer a short course in written expression along with the course in COBOL programming for its newly hired Year 2000 Project programmers. This paper describes a two-day course in written expression designed for programmers who will staff this Year 2000 Project.

2. The Challenge

Teaching programmers to write well seemed difficult enough, but accomplishing this in a two-day course made the task a considerable challenge. I started by analyzing the writing tasks that might be expected of these programmers. I then looked at client expectations for performance of these tasks. I derived a set of instructional objectives based on the task analysis and performance requirements, and selected enabling activities that could achieve those objectives given the constraints of a two-day training course for participants with potentially widely varying writing experience and abilities.

2.1 Task analysis

Year 2000 Project consultants are responsible for eliminating millennium bug errors from client system code. This process entails the following writing tasks:

- Modifying existing comments and documentation contained within the client system code.
- Writing comments and documentation for additions to the client system code.
- Writing descriptions of proposed and implemented changes to client system code.
- Writing memos and status reports for client supervisors and DCI management.

Because code and documentation written after the consultants have left the client site will be based upon the content of these documents and code comments, accuracy and clarity will be particularly important.

2.2 Performance Requirements

Client satisfaction with Year 2000 Project consultants' work depends as much on the effectiveness of the documentation they leave behind as on the efficiency of the code they write. In order to ensure that this documentation is effective, Year 2000 Project consultants need to be able to:

- a) Write consistently and correctly. Modifying code comments and documentation requires consistency with existing documentation, as well as adherence to conventions of grammar, punctuation, spelling and rhetorical development.
- b) Write clearly and concisely. Writing new comments, documentation and descriptions requires the ability to write clearly and concisely, organize ideas into coherent sentences and paragraphs, and use appropriate terminology.
- c) Address the audience and use appropriate tools. Writing memos and status reports requires assessing audience needs and expectations, identifying the purpose for writing, and using the appropriate techniques and tools to write efficiently.
- d) Write independently. Writing comments, documentation, memos and status reports without access to support staff requires consultants who can determine what needs to be written, write it in the appropriate format, and edit their own work.

2.3 Instructional Objectives

To meet performance requirements for the defined writing tasks, yet stay within the scope of a two-day class, I outlined the following objectives for the Year 2000 Project writing course:

Overall Objective: To prepare participants to write with an audience and purpose in mind, structure information coherently, use appropriate tools and language, and edit their own work.

Specific Objectives:

- Use audience and purpose analysis to determine what type of document they need to write.
- Recognize the importance of appropriate, logical, explicitly identified organization to the communication process.
- Understand the value of outlining ideas before beginning to write.

- Recognize development patterns used in creating paragraphs, and understand the importance of introductions and conclusions.
- Recognize that reading is a hypothesis-testing process in which the reader continually predicts what should be coming next and reads ahead to confirm or reject that prediction.
- Recognize the clause and phrase structure of compound and complex sentences.
- Improve written expression by avoiding common errors and using appropriate tools.

2.4 Enabling Activities

To achieve these objectives, I identified eight classroom activities:

1. Audience Analysis: techniques for determining and addressing the audience for the document
2. Purpose: techniques for identifying and sticking to the purpose for writing the document
3. Form: types of documents and techniques for determining the appropriate type of document to write
4. Outline: using an outline to determine what to include in the document
5. Development Patterns: using paragraph development patterns to express topic sentence ideas
6. Prediction Activity: discovering how readers use their experience and textual clues to predict what you are going to say next
7. Clause Consciousness: discovering how sentences are constructed from clauses and phrases
8. Common Errors: avoiding common errors to achieve immediate improvement in written expression

In addition to activities directly related to the instructional objectives, the course needed a "point of departure" activity that provided the participants with a common experiential basis for discussing the elements of good writing. Ideally this would be a writing project coordinated with one of the programming courses included in the participants' orientation course of study. Unfortunately, the orientation curriculum had not yet been determined, so I added the following communication and writing activities to the beginning and end of the course to

simulate the technical communication process without requiring specific technical content.

- "Icebreaker" Communication Activity: A simulated technical communication experience in which participants will take turns following verbal descriptions.
- Writing activity: A written communication exercise in which participants will take turns following written instructions.

3. The Course Content

To give participants an appreciation for the importance of clear expression, the course will begin with a simulated technical communication experience. Participants will create an arrangement of colored shapes and verbally describe the arrangement to their partners, who will attempt to recreate the arrangement. Class discussion of the exercise will focus on determining where and why communication succeeds or breaks down.

Meeting the reader's expectations is critical to effective written expression, so the course will cover techniques for addressing the audience, writing with a purpose, using appropriate forms, and organizing ideas coherently. Clear expression depends on understanding how words are organized into sentences and paragraphs, and the course will provide an overview of the basic rules of syntax and discourse that good writers follow instinctively. The course will describe how to avoid some of the common errors inexperienced writers fall prey to and how appropriate use of word processing tools can help them write more efficiently.

The course will conclude with a written communication exercise in which the tips and techniques covered throughout the course can be applied. Participants will write instructions for recreating arrangements of colored shapes like those in the introductory exercise. Class discussion of this exercise will focus on how techniques covered in the course contributed or could have contributed to the success of the written instructions.

3.1 Simulated technical communication experience

Effective communication requires understanding how information is successfully or unsuccessfully transferred. This activity will simulate on-the-job technical communication without requiring technical information content relating to a specific occupation. By attempting to communicate precise instructions to a partner, participants will experience

the challenges associated with communicating technical information. Successes and failures will be shared with the group, and the instructor will use these shared experiences to explain communication techniques introduced later in the course. The activity will be presented in two parts: the activity itself and the group discussion that follows.

1. Communication Activity: Participants take turns arranging colored shapes on a piece of paper and giving their partners verbal instructions for recreating the arrangement. They then evaluate how effectively they have communicated by comparing arrangements.
2. Group Discussion: Partners analyze the results of their activity to determine what contributed to or hindered the communication process. They then share their observations in a group discussion of the activity.

3.2 Addressing the audience

The class discussion will focus on the importance of picturing the intended reader and aiming at the lowest common denominator in the target audience in order to achieve the desired tone.

Four possible audiences will be considered: (1) colleague/peer, same location, (2) colleague/peer, unknown location, (3) management/marketing, same location, and (4) client system administrators and operators. The class discussion will focus on how each audience would be addressed differently.

3.3 Writing with a purpose

We write best when we have a clearly defined purpose in mind. Persuasion will be identified as one of the primary reasons for most business writing. Other likely reasons for participants' on-the-job writing tasks that will be discussed include (1) describing what you've done, (2) proposing a change, and (3) explaining how to use something.

3.4 Writing in the appropriate form

Form follows function, and appropriate written form naturally follows from the purpose for writing. Forms that participants might use include memos, letters, reports, plans, program comments, and program/system documentation. Participants will be asked to identify when they might use each of these forms.

3.5 Organizing ideas coherently

Good writers organize their ideas before they write, and outlining can be one of the simplest ways to get a writing plan down on paper. In this section of the

course, participants will be exposed to basic techniques for arranging ideas in topic outlines, writing topic sentences, and developing main ideas through deductive, inductive, and other paragraph development patterns. When they recognize reading as a predictive process, writers will understand the importance of using grammatical and rhetorical conventions to help the reader form appropriate expectations about what is coming next in their writing. Good reading techniques will be discussed along with techniques for written organization in order to help the participants understand the need for clear, predictable organization. Class discussions will be followed by an organization activity, outlining exercises, and a prediction activity.

3.6 Basic rules of syntax and discourse

Grammar is often regarded as a tedious and largely irrelevant field of study, but without an awareness of the clause and phrase structure of sentences, a writer will have difficulty creating grammatically parallel sentences. To that end, the course will include an overview of basic sentence structure designed to increase "clause consciousness:" the awareness of why sentences are constructed the way they are. The course will cover coordination and the use and position of coordinating conjunctions as well as subordination and the use and position of subordinating conjunctions. The discussion of coordination and subordination will be followed by exercises in clause combination and punctuation.

3.7 Avoiding common errors

Common errors can be recognized easily, and self-correction of these errors will help participants build confidence in their ability to improve their writing. The errors to be discussed were selected on the basis of how frequently they occur and how easily participants can learn to avoid them. They include:

- Sentence fragments, run-ons and comma splices
- Dangling participles
- When to use apostrophes (and when not to use them)
- "Irregardless" and other double negatives
- Two-word compounds
- "That" vs. "which"
- "Who" vs. "whom"
- "Assure" vs. "ensure" vs. "insure"
- "Affect" vs. "effect"

- Avoiding gender bias in pronoun usage and compound constructions
- Hyphenating compound noun modifiers
- Dashes and hyphens
- "i.e.," vs. "e.g."
- "Infer" vs. "imply"

3.8 Tools of the trade

Online spell checkers, grammar checkers, dictionaries, thesauruses, and word processing templates can make significant improvement in participants' written expression with minimal effort. Discussion of the usefulness and limitation of these tools will be followed by a hands-on word processing activity.

3.9 Written communication exercise

The final course activity will be a written version of the "icebreaker" activity at the beginning of the course. Repeating the opening technical communication activity in written form will enable participants to focus on newly acquired writing skills without being concerned with the content of what they are being asked to write. This activity will simulate on-the-job technical writing without requiring technical content relating to a specific occupation. It will provide an opportunity to review and reinforce the skills taught in the course.

The activity will be presented as a writing activity and an evaluation activity. During the writing activity, participants will edit graphics files containing colored shapes, rearranging the shapes into a unique pattern and saving the arrangement under a unique filename. Participants will then write instructions for recreating the arrangement and exchange instructions with their partners. They then attempt to recreate the arrangements from the written instructions.

During the evaluation activity, partners will compare their recreated arrangements to see how closely they resemble the originals, and then they will analyze the instructions to determine where any discrepancies occurred. The instructor will then invite participants to share their discoveries with the rest of the class.

Class discussion of this activity will focus on how participants' success or failure to recreate the arrangements of shapes relates to the communication techniques introduced in the course: audience analysis, writing with a purpose, appropriate format, coherent organization, clear

sentence structure, and the avoidance of common errors.

4. Conclusions

A two-day writing course needs to be limited in scope to avoid overwhelming the participants. This is especially true when the course is to be only a small part of a larger orientation program. Consequently, the ultimate goal of this course will not necessarily be to turn these programmers into good writers, but to provide them with a handful of tips and techniques that will be easy to remember and can be applied immediately in the workplace. With a better understanding of the writing process, course participants will be more likely to appreciate the importance of clear written expression in the work that they produce for their Year 2000 Project clients.

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6. References

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