

FIFTEENTH EDITION

Technical Communication

Laura J. **GURAK**

John M. **LANNON**



List of Sample Documents and Forms

- Fig. 1.2** Effective Technical Document 9
- Fig. 2.3** Technical Version of an Emergency Treatment Report 21
- Fig. 2.4** Semitechnical Version of Figure 2.3 22
- Fig. 2.5** Nontechnical Version of Figure 2.3 23
- Fig. 2.6** Web Page Designed for Multiple Audiences 26
- Fig. 2.7** Audience and Use Profile 29
- Fig. 3.4** Persuasive Letter 53
- Fig. 4.6** Examples of Plagiarism 71
- Fig. 4.7** Sample Code of Ethics 75
- Fig. 5.1** Planning Form for a Collaborative Project 81
- Fig. 5.2** Document Edited Using Track Changes 90
- Fig. 5.3** Inappropriate Email for a Global Audience 95
- Fig. 6.4** Final Edited Version of a Report 110
- Fig. 7.5** Text of an Informational Interview 135
- Fig. 7.6** Cover Email for a Questionnaire 138
- Fig. 7.7** Questionnaire 139
- Fig. 9.3** Article to Be Summarized 171
- Fig. 9.4** Summary of Figure 9.3 172
- Fig. 9.6** Executive Summary 175
- Fig. 10.1** Document with a Standard Structure 183
- Fig. 10.2** Document with a Nonstandard Structure 184
- Fig. 10.3** Formal Outline 186
- Fig. 10.4** Module from a Storyboard 189
- Fig. 12.2** Planning Sheet for Preparing Visuals 242
- Fig. 13.1** Ineffective Page Design 284
- Fig. 13.2** Effective Page Design 285
- Fig. 14.1** Primary Email 310
- Fig. 14.2** Transmittal Email 311
- Fig. 14.3** Formatted Email 312
- Fig. 14.4** Unprofessional Email 315
- Fig. 14.5** Email to External Customers 318
- Fig. 14.6** Email for a Global Audience 320
- Fig. 15.2** Typical Memo 330
- Fig. 15.3** Transmittal Memo 334
- Fig. 15.4** Summary or Follow-up Memo 335
- Fig. 15.5** Routine Miscellaneous Memo 337
- Fig. 15.6** Standard Workplace Letter 340
- Fig. 15.8** Bad News Letter 351
- Fig. 15.9** Unsolicited Inquiry Letter 353
- Fig. 15.10** Request for an Informative Interview 354
- Fig. 15.11** Routine Claim Letter 356
- Fig. 15.12** Arguable Claim Letter 357
- Fig. 15.13** Sales Letter 359
- Fig. 15.14** Positive Adjustment Letter 361
- Fig. 15.15** Negative Adjustment Letter 362
- Fig. 16.2** Reverse Chronological Résumé 372
- Fig. 16.3** Functional Résumé 375
- Fig. 16.4** Solicited Application Letter 377
- Fig. 16.5** Unsolicited Application Letter 380
- Fig. 16.6** Scannable Résumé 381
- Fig. 16.7** E-Portfolio 384
- Fig. 17.1** Effective Definition 397
- Fig. 17.3** Expanded Definition (Semitechnical) 404
- Fig. 17.4** Expanded Definition (Nontechnical) 406
- Fig. 18.2** Product Description 419
- Fig. 18.3** Process Description 420
- Fig. 18.4** Complex Product Description (Nontechnical) 421
- Fig. 18.5** Complex Process Description (Nontechnical) 424
- Fig. 18.6** Specifications for a Building Project 429
- Fig. 18.7** Page from a Fact Sheet 432
- Fig. 19.1** Table of Contents from a User Manual 440
- Fig. 19.2** Brief Reference Card 440
- Fig. 19.3** Web-Based Instructions 441
- Fig. 19.4** Wordless Instructions 444
- Fig. 19.6** Adequate Detail for Laypersons 447
- Fig. 19.7** Complete Set of Instructions 455
- Fig. 19.8** Online Help Screen 458
- Fig. 19.9** Safety Procedures 460
- Fig. 19.10** Standard Operating Procedure 461
- Fig. 19.11** Usability Survey 463
- Fig. 20.1** Progress Report on the Job 472

Fig. 20.2 Progress Report on Term Project 473
Fig. 20.3 Periodic Activity Report 475
Fig. 20.4 Trip Report 476
Fig. 20.5 Meeting Minutes 478
Fig. 20.6 Feasibility Report 481
Fig. 20.7 Recommendation Report 483
Fig. 20.8 Justification Report 485
Fig. 20.9 Peer Review Report 487
Fig. 21.1 Summary of Feasibility Study 496
Fig. 21.3 Formal Analytical Report 515
Fig. 22.1 Planning Proposal 537

Fig. 22.2 Research Proposal 538
Fig. 22.3 Sales Proposal 541
Fig. 22.4 Formal Proposal 553
Fig. 23.1 Planning Sheet for Oral Presentation 570
Fig. 23.2 Partial Storyboard 579
Fig. 23.4 PowerPoint Presentation 584
Fig. 24.1 Interactive Web Page 598
Fig. 24.2 User-Friendly Web Page 602
Fig. 25.1 Sample Social Media Policy 615
Fig. 25.3 Twitter Feed 619

A Topical List of the GUIDELINES Boxes

General Skills		
Analyzing Your Audience and Its Use of the Document	28	352
Persuasion	50	355
Ethical Communication	76	358
Proofreading	113	360
Teamwork		363
Managing a Collaborative Project	82	
Running a Meeting	85	374
Active Listening	88	378
Peer Review and Editing	92	382
Communicating on a Global Team	96	385
Research and Avoiding Plagiarism		388
Researching on the Web and with Social Media	133	
Informational Interviews	136	374
Surveys	140	378
Evaluating and Interpreting Information	161	382
Summarizing Information	172	385
Taking Notes	627	388
Quoting	628	
Paraphrasing	630	374
Organization and Style		378
Outlining	187	382
Deciding about Tone	224	385
Avoiding Biased Language	229	388
Visuals		
Creating Tables and Graphs	253	374
Creating Charts	259	378
Creating Graphic Illustrations	267	382
Incorporating Color	271	385
Presenting Visuals	273	388
Obtaining and Citing Visual Material	276	
Document Design		
Shaping the Page	292	374
Styling the Words and Letters	295	378
Adding Emphasis	296	382
Using Headings	299	385
Memos, Email, Text Messages, and Letters		
Writing and Using Email	320	374
Memos	335	378
Letters in General	349	382
Conveying Bad News		385
Inquiry Letters		388
Claim Letters		
Sales Letters		374
Adjustment Letters		378
Getting a Job		382
Writing and Designing Your Résumé		385
Application Letters		388
Online Job Applications		
Dossiers, Portfolios, and E-portfolios		374
Interviews and Follow-Up Communication		378
Reports and Proposals		382
Progress Reports		385
Periodic Activity Reports		388
Trip Reports		
Meeting Minutes		374
Feasibility Reports		378
Recommendation Reports		382
Justification Reports		385
Peer Review Reports		388
Reasoning through an Analytical Problem		
Proposals		374
Other Documents		378
Definitions		382
Descriptions		385
Specifications		388
Technical Marketing Materials		
Providing Appropriate Detail in Instructions		374
Designing Instructions		378
Oral Presentations		382
Using Presentation Software		385
Delivering Oral Presentations and Managing Listener Questions		388
Video Conferencing		
Web Pages and Social Media		374
Writing and Using Blogs and Wikis		378
Writing Web Pages		382
Designing Web Pages		385
Global, Ethical, and Legal Considerations on the Web		388
Creating Instructional Videos for Social Media		
Writing and Using Social Media		374

A Guide to the CHECKLISTS

Checklist Analyzing Audience and Purpose	31
Checklist Persuasion	56
Checklist Ethical Communication	77
Checklist Teamwork and Global Considerations	97
Checklist Proofreading	114
Checklist The Research Process	162
Checklist Summaries	177
Checklist Organizing Information	195
Checklist Style	232
Checklist Visuals	277
Checklist Page Design	304
Checklist Email	322
Checklist Memos	336
Checklist Letters	363
Checklist Résumés	389
Checklist Application Letters	390
Checklist Supporting Materials	391
Checklist Definitions	409
Checklist Technical Descriptions	433
Checklist Specifications	434
Checklist Technical Marketing Materials	435
Checklist Instructions and Procedures	465
Checklist Informal Reports	486
Checklist Analytical Reports	528
Checklist Proposals	564
Checklist Oral Presentations	593
Checklist Writing and Designing for Blogs, Wikis, and the Web	609
Checklist Social Media	624

Technical Communication

Fifteenth Edition

John M. Lannon

University of Massachusetts, Dartmouth

Laura J. Gurak

University of Minnesota



Executive Portfolio Manager: Aron Keesbury
Content Producer: Barbara Cappuccio
Content Developer: Bruce Cantley
Portfolio Manager Assistant: Christa Cottone
Senior Product Marketing Manager: Michael Coons
Product Marketing Manager: Nicholas Bolt
Content Producer Manager: Ken Volcjak
Managing Editor: Cynthia Cox

Digital Studio Course Producer: Elizabeth Bravo
Full-Service Project Management: Integra Software Services
Printer/Binder: LSC Communications, Inc.
Cover Printer: Phoenix Color/Hagerstown
Senior Art Director: Cate Barr
Cover Design: Cadence Design Studio

Acknowledgments of third party content appear on appropriate page within text, which constitutes an extension of this copyright page.

Copyright © 2020, 2018, 2017 by John Michael Lannon. All Rights Reserved. Printed in the United States of America. This publication is protected by copyright, and permission should be obtained from the publisher prior to any prohibited reproduction, storage in a retrieval system, or transmission in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise. For information regarding permissions, request forms and the appropriate contacts within the Pearson Education Global Rights & Permissions Department, please visit www.pearsoned.com/permissions/.

PEARSON, ALWAYS LEARNING, and Revel are exclusive trademarks in the United States and/or other countries owned by Pearson Education, Inc., or its affiliates.

Unless otherwise indicated herein, any third-party trademarks that may appear in this work are the property of their respective owners and any references to third-party trademarks, logos, or other trade dress are for demonstrative or descriptive purposes only. Such references are not intended to imply any sponsorship, endorsement, authorization, or promotion of Pearson's products by the owners of such marks, or any relationship between the owner and Pearson Education, Inc., or its affiliates, authors, licensees, or distributors.

Library of Congress Cataloging-in-Publication Data

Names: Lannon, John M., author. | Gurak, Laura J., author.
Title: Technical communication / John M. Lannon, Laura J. Gurak.
Description: 15e. | New York, NY, USA: Pearson, 2020.
Identifiers: LCCN 2018042238 | ISBN 9780135203224 (0-13-520322-8)
Subjects: LCSH: Technical writing. | Communication of technical information.
Classification: LCC T11 .L24 2020 | DDC 808.06/66—dc23
LC record available at <https://lcn.loc.gov/2018042238>

Rental Edition

ISBN-10: 0-13-520322-8
ISBN-13: 978-0-13-520322-4

Instructor's Review Copy

ISBN-10: 0-13-520314-7
ISBN-13: 978-0-13-520314-9

Loose-Leaf Edition

ISBN-10: 0-13-520330-9
ISBN-13: 978-0-13-520330-9

Access Code Card

ISBN-10: 0-13-516478-8
ISBN-13: 978-0-13-516478-5

Revel Combo Card

ISBN-10: 0-13-525988-6
ISBN-13: 978-0-13-525988-7



Brief Contents

Part 1 Communicating in the Workplace	1	Part 3 Organization, Style, and Visual Design	179
1 Introduction to Technical Communication	2	10 Organizing for Readers	180
2 Meeting the Needs of Specific Audiences	16	11 Editing for a Professional Style and Tone	198
3 Persuading Your Audience	33	12 Designing Visual Information	235
4 Weighing the Ethical Issues	58	13 Designing Pages and Documents	281
5 Teamwork and Global Considerations	79	Part 4 Specific Documents and Applications	307
6 An Overview of the Technical Writing Process	100	14 Email	308
Part 2 The Research Process	117	15 Workplace Memos and Letters	325
7 Thinking Critically about the Research Process	118	16 Résumés and Other Job-Search Materials	366
8 Evaluating and Interpreting Information	145	17 Technical Definitions	393
9 Summarizing Research Findings and Other Information	165	18 Technical Descriptions, Specifications, and Marketing Materials	412
		19 Instructions and Procedures	437

20	Informal Reports	468	Part 5	Resources for Technical Writers	626
21	Formal Analytical Reports	489		Appendix A: A Quick Guide to Documentation	627
22	Proposals	531		Appendix B: A Quick Guide to Grammar, Usage, and Mechanics	658
23	Oral Presentations and Video Conferencing	566		Works Cited	680
24	Blogs, Wikis, and Web Pages	596		Index	685
25	Social Media	612			

Detailed Contents

Preface	xxi		
Part 1	Communicating in the Workplace	1	
1	Introduction to Technical Communication	2	
What Is Technical Communication?		3	
Technical Communication Is a Digital <i>and</i> a Human Activity		4	
Technical Communication Reaches a Global Audience		5	
Technical Communication Is Part of Most Careers		6	
Technical Communicators Play Many Roles		7	
Main Features of Technical Communication		7	
Reader-Centered		7	
Accessible and Efficient		8	
Often Produced by Teams		10	
Delivered in Paper and Digital Versions		10	
Purposes of Technical Communication		10	
Documents That Inform		10	
Documents That Instruct		10	
Documents That Persuade		11	
Preparing Effective Technical Documents		11	
CASE Providing Information Readers Can Use		12	
CASE Being Persuasive		13	
CASE Considering the Ethical Issues		13	
CASE Working on a Team and Thinking Globally		14	
■ PROJECTS		15	
2	Meeting the Needs of Specific Audiences	16	
Analyze Your Document's Audience and Purpose		18	
Primary and Secondary Audiences		18	
Your Relationship to Your Readers		19	
Purpose of Your Document		19	
Primary and Secondary Purposes		19	
Intended Use of the Document		20	
Assess the Audience's Technical Background		20	
Highly Technical Audience		20	
Semitechnical Audience		22	
Nontechnical Audience		23	
Audiences with Varying Technical Backgrounds		24	
CASE Tailoring a Single Document for Multiple Audiences		24	
Digital Documents for Multiple Audiences		25	
Anticipate Your Audience's Preferences		25	
Length and Details		25	
Format and Medium		25	
Tone		27	
Due Date and Timing		27	
Budget		27	
■ GUIDELINES for Analyzing Your Audience and Its Use of the Document		28	
Develop an Audience and Use Profile		28	
CASE Developing an Audience and Use Profile		30	
■ CHECKLIST Analyzing Audience and Purpose		31	
■ PROJECTS		31	
3	Persuading Your Audience	33	
What Is Persuasion?		34	
Identify Your Specific Persuasive Goal		36	
Try to Predict Audience Reaction		36	
Expect Audience Resistance		37	
Know How to Connect with the Audience		38	
CASE Connecting with the Audience		39	
Allow for Give-and-Take		41	
Ask for a Specific Response		41	
Never Ask for Too Much		41	
Recognize All Constraints		42	
Organizational Constraints		42	
Legal Constraints		43	
Ethical Constraints		43	
Time Constraints		44	
Social and Psychological Constraints		44	
■ CONSIDER THIS People Often React Emotionally to Persuasive Appeals		45	

Support Your Claims Convincingly	46	■ CHECKLIST Ethical Communication	77
Offer Convincing Evidence	46	■ PROJECTS	77
FACTUAL STATEMENTS 47 • STATISTICS 47 •			
EXAMPLES 47 • EXPERT TESTIMONY 48			
Appeal to Common Goals and Values	48		
Consider the Cultural Context	49		
Digital Persuasion and Social Media	50		
■ GUIDELINES for Persuasion	50		
Shaping Your Argument	52		
■ CHECKLIST Persuasion	56		
■ PROJECTS	56		
4 Weighing the Ethical Issues	58		
Recognize Examples and Causes of Unethical Workplace Communication	60		
Yielding to Social Pressure	61		
Mistaking Groupthink for Teamwork	62		
Types of Communication Abuses in the Workplace	62		
Suppressing Knowledge the Public Needs	63		
Hiding Conflicts of Interest	63		
Exaggerating Claims about Technology	63		
Falsifying or Fabricating Data	64		
Using Visual Images That Conceal the Truth	64		
Stealing or Divulging Proprietary Information	64		
Withholding Information People Need for Their Jobs	64		
Exploiting Cultural Differences	65		
Ethical Issues with Social and Digital Media	66		
Rely on Critical Thinking for Ethical Decisions	66		
Reasonable Criteria for Ethical Judgment	67		
Ethical Dilemmas	68		
Anticipate Some Hard Choices	68		
CASE A Hard Choice	69		
Learn to Recognize Legal Issues and Plagiarism	70		
Learn to Recognize Plagiarism	71		
Blatant versus Unintentional Plagiarism	72		
Plagiarism and the Internet	72		
Plagiarism and Your Career	72		
■ CONSIDER THIS Ethical Standards are Good for Business	72		
Decide When and How to Report Ethical Abuses	73		
■ GUIDELINES for Ethical Communication	76		
		5 Teamwork and Global Considerations	79
		Teamwork and Project Management	80
		■ GUIDELINES for Managing a Collaborative Project	82
		Teamwork: Virtual and Face to Face	83
		■ GUIDELINES for Running a Meeting	85
		Identifying and Managing Conflicts in Collaborative Groups	85
		Interpersonal Differences	85
		Gender Differences	86
		Cultural Differences	86
		Managing Group Conflict	86
		Overcoming Differences by Active Listening	87
		■ GUIDELINES for Active Listening	88
		Thinking Creatively	88
		Brainstorm as a Way of Getting Started	88
		Brainstorming with Digital Technologies	89
		Mind-Mapping	89
		Storyboarding	91
		Reviewing and Editing Others' Work	91
		■ GUIDELINES for Peer Reviewing and Editing	92
		Ethical Issues in Workplace Collaboration	92
		Intimidating One's Peers	92
		Claiming Credit for Others' Work	93
		Hoarding Information	93
		Global Considerations When Working in Teams	93
		Interpersonal Issues in Global Teams	94
		DIGITAL COMMUNICATION AND SOCIAL CUES 94 • MISUNDERSTANDING CULTURAL CODES 94 • MISUSING HUMOR, SLANG, AND IDIOMS 94 • MISUSING CULTURALLY SPECIFIC REFERENCES 95 • FAILING TO ALLOW FOR EASY TRANSLATION 95 • FAILING TO LISTEN 96	
		■ GUIDELINES for Communicating on a Global Team	96
		■ CHECKLIST Teamwork and Global Considerations	97
		■ PROJECTS	98
		6 An Overview of the Technical Writing Process	100
		Critical Thinking in the Writing Process	102

A Sample Writing Situation	104	Observations and Experiments	138
Working with the Information	105	■ GUIDELINES for Surveys	140
Planning the Document	106	■ CONSIDER THIS Frequently Asked Questions about Copyright	142
Drafting the Document	108	■ PROJECTS	143
Revising the Document	109		
Make Proofreading Your Final Step	112	8 Evaluating and Interpreting Information	145
■ GUIDELINES for Proofreading	113	Evaluate the Sources	146
Digital Technology and the Writing Process	113	Pay Special Attention to Evaluating Online Sources	148
■ CHECKLIST Proofreading	114	Evaluate the Evidence	148
■ PROJECTS	115	Interpret Your Findings	149
		Identify Your Level of Certainty	150
Part 2 The Research Process	117	Examine the Underlying Assumptions	150
7 Thinking Critically about the Research Process	118	Be Alert for Personal Bias	151
Three Essential Approaches to Research	119	Consider Other Possible Interpretations	151
Asking the Right Questions	120	■ CONSIDER THIS Standards of Proof Vary for Different Audiences	152
CASE Defining and Refining a Research Question	120	Avoid Distorted or Unethical Reasoning	152
Exploring a Balance of Views	122	Faulty Generalization	152
Achieving Adequate Depth in Your Search	122	Faulty Causal Reasoning	153
Evaluating and Interpreting Your Findings	124	Faulty Statistical Analysis	155
Primary versus Secondary Sources	125	THE SANITIZED STATISTIC 155 • THE MEANINGLESS STATISTIC 156 • THE UNDEFINED AVERAGE 156 • THE DISTORTED PERCENTAGE FIGURE 157 • THE BOGUS RANKING 157 • CONFUSION OF CORRELATION WITH CAUSATION 157 • THE BIASED META-ANALYSIS 158 • THE FALLIBLE COMPUTER MODEL 158 • MISLEADING TERMINOLOGY 158	
Exploring Secondary Sources	125	Acknowledge the Limits of Research	159
Searching for Secondary Sources	126	Obstacles to Validity and Reliability	159
GOOGLE AND OTHER SEARCH ENGINES 126 • WIKIPEDIA 127 • DIGITAL LIBRARIES 127 • LIBRARIES AND LIBRARY WEB SITES 127		Flaws in Research Studies	160
Types of Secondary Sources	128	Social Media and Research Reporting	160
WEB SITES (GENERAL) 128 • GOVERNMENT WEB SITES 128 • BLOGS 128 • WIKIS (INCLUDING WIKIPEDIA) 129 • SOCIAL MEDIA 129 • ONLINE GROUPS 129 • NEWS OUTLETS (INCLUDING MAGAZINES AND OTHER PERIODICALS) 129 • BOOKS 130 • PEER-REVIEWED JOURNAL ARTICLES 130 • GRAY LITERATURE 130 • REFERENCE WORKS 131		■ GUIDELINES for Evaluating and Interpreting Information	161
■ GUIDELINES for Researching on the Web and with Social Media	133	■ CHECKLIST The Research Process	162
Exploring Primary Sources	134	■ PROJECTS	163
Unsolicited Inquiries	134		
Informational Interviews	134	9 Summarizing Research Findings and Other Information	165
■ GUIDELINES for Informational Interviews	136	Considering Audience and Purpose	166
Surveys	137	What Readers Expect from a Summary	168

How to Create a Summary	168	Use Passive Voice Selectively	205
■ GUIDELINES for Summarizing Information	172	Avoid Overstuffed Sentences	206
Special Types of Summaries	173	Editing for Conciseness	206
Closing Summary	173	Avoid Wordy Phrases	207
Informative Abstract (“Summary”)	173	Eliminate Redundancy	207
Descriptive Abstract (“Abstract”)	174	Avoid Needless Repetition	207
Executive Abstract	175	Avoid <i>There</i> Sentence Openers	208
Summarizing Information for Social Media	176	Avoid Some <i>It</i> Sentence Openers	208
■ CHECKLIST Summaries	177	Delete Needless Prefaces	208
■ PROJECTS	177	Avoid Weak Verbs	209
		Avoid Excessive Prepositions	210
		Avoid Nominalizations	210
		Make Negatives Positive	212
		Clean Out Clutter Words	212
		Delete Needless Qualifiers	213
Part 3 Organization, Style, and Visual Design	179	Editing for Fluency	213
10 Organizing for Readers	180	Combine Related Ideas	214
The Typical Shape of Workplace Documents	182	Vary Sentence Construction and Length	216
Outlining	182	Use Short Sentences for Special Emphasis	216
An Outlining Strategy	182	Finding the Exact Words	216
The Formal Outline	185	Prefer Simple and Familiar Wording	217
■ GUIDELINES for Outlining	187	Avoid Useless Jargon	218
Storyboarding	188	Use Acronyms Selectively	219
Paragraphing	188	Avoid Triteness	219
The Support Paragraph	188	Avoid Misleading Euphemisms	219
The Topic Sentence	190	Avoid Overstatement	220
Paragraph Unity	191	Avoid Imprecise Wording	221
Paragraph Coherence	191	Be Specific and Concrete	221
Paragraph Length	192	Use Analogies to Sharpen the Image	222
Chunking	193	Adjusting Your Tone	223
Providing an Overview	194	■ GUIDELINES for Deciding about Tone	224
Organizing for Social Media and Global Audiences	195	Consider Using an Occasional Contraction	224
■ CHECKLIST Organizing Information	195	Address Readers Directly	225
■ PROJECTS	196	Use <i>I</i> and <i>We</i> When Appropriate	225
		Prefer the Active Voice	226
		Emphasize the Positive	226
		Avoid an Overly Informal Tone	226
		Avoid Personal Bias	227
		Avoid Biased Language	228
		■ GUIDELINES for Avoiding Biased Language	229
11 Editing for a Professional Style and Tone	198	Global, Legal, and Ethical Implications of Style and Tone	230
Editing for Clarity	200	Digital Writing and Editing	231
Avoid Ambiguous Pronoun References	200		
Avoid Ambiguous Modifiers	201		
Unstack Modifying Nouns	202		
Arrange Word Order for Coherence and Emphasis	202		
Use Active Voice Whenever Possible	203		

■ CHECKLIST Style	232	Use Color to Organize	270
■ PROJECTS	234	Use Color to Orient	270
		Use Color to Emphasize	271
12 Designing Visual Information	235	■ GUIDELINES for Incorporating Color	271
Why Visuals Matter	237	Presenting Visuals	272
When to Use Visuals and How to Choose the Right Ones	238	■ GUIDELINES for Presenting Visuals	273
When to Use Visuals	238	Ethical Considerations	273
Types of Visuals to Consider	239	Present the Real Picture	274
Choosing the Right Visual	240	Present the Complete Picture	274
Using Software to Create Visuals	241	Don't Mistake Distortion for Emphasis	274
Tables	243	Use Copyright Free Visuals or Credit the Work of Others	276
How to Construct a Table	245	■ GUIDELINES for Obtaining and Citing Visual Material	276
Graphs	246	Social Media and Cultural Considerations	277
Bar Graphs	247	■ CHECKLIST Visuals	277
SIMPLE BAR GRAPH 247 • MULTIPLE-BAR GRAPH 247 • HORIZONTAL-BAR GRAPH 248 • STACKED-BAR GRAPH 248 • 100 PERCENT BAR GRAPH 249 • 3-D BAR GRAPH 250		■ PROJECTS	278
Line Graphs	250		
SIMPLE LINE GRAPH 250 • MULTILINE GRAPH 251 • DEVIATION LINE GRAPH 251 • BAND OR AREA GRAPH 252 • MULTIPLE-BAND GRAPH 252			
■ GUIDELINES for Creating Tables and Graphs	253	13 Designing Pages and Documents	281
Charts	254	Page Design in Print and Digital Workplace Documents	282
Pie Charts	254	Design Skills Needed by Technical Communicators	283
Organization Charts	256	Word Processing and Desktop Publishing	286
Flowcharts	256	Using Styles and Templates	286
Tree Charts	256	Using Style Guides and Style Sheets	287
Gantt and PERT Charts	256	Creating a Design That Works for Your Readers	287
Pictograms	259	Shaping the Page	287
■ GUIDELINES for Creating Charts	259	PROVIDE PAGE NUMBERS, HEADERS, AND FOOTERS 287 • USE A GRID 288 • USE WHITE SPACE TO CREATE AREAS OF EMPHASIS 288 • PROVIDE AMPLE MARGINS 289 • KEEP LINE LENGTH REASONABLE 290 • KEEP LINE SPACING CONSISTENT 290 • TAILOR EACH PARAGRAPH TO ITS PURPOSE 290 • MAKE LISTS FOR EASY READING 291	
Graphic Illustrations	260	■ GUIDELINES for Shaping the Page	292
Diagrams	261	Styling the Words and Letters	292
EXPLODED DIAGRAMS 261 • CUTAWAY DIAGRAMS 261 • BLOCK DIAGRAMS 262		SELECT AN APPROPRIATE TYPEFACE 293 • USE TYPE SIZES THAT ARE EASY TO READ 294 • USE FULL CAPS SPARINGLY • 295	
Photographs	263	■ GUIDELINES for Styling the Words and Letters	295
Maps	264	Adding Emphasis	296
Symbols and Icons	265		
Infographics	266		
■ GUIDELINES for Creating Graphic Illustrations	267		
Using Color and Presenting Visuals	269		

■ GUIDELINES for Adding Emphasis	296	Routine Miscellaneous Memo	333
Using Headings for Access and Orientation	296	■ GUIDELINES for Memos	335
LAY OUT HEADINGS BY LEVEL 297 • DECIDE HOW		■ CHECKLIST Memos	336
TO PHRASE YOUR HEADINGS 297 • MAKE HEADINGS		Letter Basics, Audience, and Purpose	338
VISUALLY CONSISTENT AND GRAMMATICALLY		Letter Parts, Formats, and Design Elements	339
PARALLEL 299		Standard Parts	339
■ GUIDELINES for Using Headings	299	HEADING AND DATE 339 • INSIDE ADDRESS 339	
Audience Considerations in Page Design	300	• SALUTATION 341 • TEXT 341 • COMPLIMENTARY	
Designing Digital Documents	301	CLOSING 341 • SIGNATURE 341	
Adobe Acrobat™ and PDF files	301	Optional Parts	342
Web Pages	302	ATTENTION LINE 342 • SUBJECT LINE 342	
Tablets, Smartphones, and E-reader Pages	303	• TYPIST'S NOTATION 343 • ENCLOSURE	
Social Media Posts	303	NOTATION 343 • COPY (OR DISTRIBUTION)	
■ CHECKLIST Page Design	304	NOTATION 343 • POSTSCRIPT 343	
■ PROJECTS	305	Formats and Design Features	344
		LETTER FORMAT 344 • QUALITY	
		STATIONERY 344 • UNIFORM MARGINS AND	
		SPACING 344 • HEADERS FOR SUBSEQUENT	
		PAGES 344 • THE ENVELOPE 344	
Part 4 Specific Documents and Applications	307	Letter Tone	345
		Establish and Maintain a “You” Perspective	345
14 Email	308	Be Polite and Tactful	346
Email Basics and Types	309	Use Plain English	346
Considering Audience and Purpose	311	Decide on a Direct or Indirect	
Email Parts and Format	313	Organizing Pattern	347
Email Style and Tone	314	Global and Ethical Considerations	
Interpersonal Issues and Email	314	When Writing Letters	348
Choose the Right Approach for the Situation	316	■ GUIDELINES for Letters in General	349
Email and External Audiences	317	Conveying Bad or Unwelcome	
Ethical, Legal, and Global Issues when		News in Letters	350
Using Email	318	Common Types of Letters	350
■ GUIDELINES for Writing and Using Email	320	Inquiry Letters	350
■ CHECKLIST Email	322	■ GUIDELINES for Conveying Bad News	352
■ PROJECTS	323	■ GUIDELINES for Inquiry Letters	355
		Claim Letters	355
15 Workplace Memos and Letters	325	■ GUIDELINES for Claim Letters	358
Memo Basics, Audience, and Purpose	326	Sales Letters	358
Memo Parts and Format	327	■ GUIDELINES for Sales Letters	360
Memo Tone	330	Adjustment Letters	360
Common Types of Memos	333	■ GUIDELINES for Adjustment Letters	363
Transmittal Memo	333	■ CHECKLIST Letters	363
Summary or Follow-up Memo	333	■ PROJECTS	364

16 Résumés and Other Job-Search Materials

Assessing Your Skills and Aptitudes

Researching the Job Market

Plan Your Strategy

Focus Your Search

Explore Employment Resources

Learn to Network

Résumés

Parts of a Résumé

CONTACT INFORMATION 371 • CAREER OBJECTIVES 371 • EDUCATION 371 • WORK EXPERIENCE 373 • PERSONAL DATA AND INTERESTS 373 • REFERENCES 373 • PORTFOLIOS 373

Using Templates

Organizing Your Résumé

■ **GUIDELINES for Writing and Designing Your Résumé**

Application Letters

Solicited Application Letters

Unsolicited Application Letters

■ **GUIDELINES for Application Letters**

Digital and Print Job Application Materials

■ **CONSIDER THIS Your Social Media Profile and the Job Search**

■ **GUIDELINES for Online Job Applications**

Dossiers, Portfolios, and E-Portfolios

Dossiers

Portfolios and E-portfolios

■ **GUIDELINES for Dossiers, Portfolios, and E-portfolios**

Interviews and Follow-Up Communication

Interviews

Follow-Up Communication

THANK YOU NOTES 387 • ACCEPTANCE OR REFUSAL LETTERS 388

■ **GUIDELINES for Interviews and Follow-Up Communication**

■ **CHECKLIST Résumés**

■ **CHECKLIST Application Letters**

366

368

368

368

369

370

370

371

373

374

376

376

378

378

379

382

382

383

383

383

385

385

387

388

389

390

■ **CHECKLIST Supporting Materials**

391

■ **PROJECTS**

391

17 Technical Definitions

393

Considering Audience and Purpose

395

Legal, Ethical, Societal, and Global Implications

395

Types of Definition

396

Parenthetical Definitions

397

Sentence Definitions

398

Expanded Definitions

398

Methods for Expanding Definitions

399

Etymology

399

History

400

Negation

400

Operating Principle

400

Analysis of Parts

400

Visuals

401

Comparison and Contrast

401

Required Conditions

402

Examples

402

Using Multiple Expansion Methods

402

AN EXPANDED DEFINITION FOR SEMITECHNICAL READERS 402 • AN EXPANDED DEFINITION FOR NONTECHNICAL READERS 403

Placing Definitions in a Document

403

■ **GUIDELINES for Definitions**

409

■ **CHECKLIST Definitions**

409

■ **PROJECTS**

410

18 Technical Descriptions, Specifications, and Marketing Materials

412

Considering Audience and Purpose

413

Objectivity in Technical Descriptions

414

Elements of Descriptions

415

Clear and Limiting Title

415

Appropriate Level of Detail and Technicality

415

Visuals

415

Clearest Descriptive Sequence

416

SPATIAL SEQUENCE 416 • FUNCTIONAL SEQUENCE 416 • CHRONOLOGICAL SEQUENCE 416

Types of Technical Descriptions	416	Online Help	457
A Complex Product Description	418	Social Media Instructions	457
A Complex Process Description	423	Procedures	459
■ GUIDELINES for Descriptions	427	Evaluating the Usability of Instructions and Procedures	462
Specifications	427	Usability and the User Experience	462
Types of Specifications	427	Approaches for Evaluating a Document's Usability	464
Considering Audience and Purpose	428	THINK-ALOUD EVALUATION 464 • FOCUS GROUPS 464	
■ GUIDELINES for Specifications	430	■ CHECKLIST Instructions and Procedures	465
Technical Marketing Materials	430	■ PROJECTS	466
■ GUIDELINES for Technical Marketing Materials	433		
■ CHECKLIST Technical Descriptions	433		
■ CHECKLIST Specifications	434		
■ CHECKLIST Technical Marketing Materials	435		
■ PROJECTS	435		
19 Instructions and Procedures	437	20 Informal Reports	468
Considering Audience and Purpose	439	Informal Versus Formal Reports	469
Formats for Instructional Documents	439	Informational Versus Analytical Reports	470
Faulty Instructions and Legal Liability	442	Types of Informational Reports	471
Elements of Effective Instructions	443	Progress Reports	471
Clear and Limiting Title	443	■ GUIDELINES for Progress Reports	474
Informed and Accurate Content	443	Periodic Activity Reports	474
Visuals	443	■ GUIDELINES for Periodic Activity Reports	474
Appropriate Level of Detail and Technicality	444	Trip Reports	476
PROVIDE BACKGROUND 445 • PROVIDE ADEQUATE DETAIL 446 • OFFER EXAMPLES 446		■ GUIDELINES for Trip Reports	477
INCLUDE TROUBLESHOOTING ADVICE 448		Meeting Minutes	478
■ GUIDELINES for Providing Appropriate Detail in Instructions	448	■ GUIDELINES for Meeting Minutes	479
Logically Ordered Steps	448	Types of Analytical Reports	479
Notes and Hazard Notices	448	Feasibility Reports	479
Readability	450	■ GUIDELINES for Feasibility Reports	480
USE DIRECT ADDRESS, ACTIVE VOICE, AND IMPERATIVE MOOD 450 • USE SHORT AND LOGICALLY SHAPED SENTENCES 450 • USE PARALLEL PHRASING 451 • PHRASE INSTRUCTIONS AFFIRMATIVELY 451 • USE TRANSITIONS TO MARK TIME AND SEQUENCE 452		Recommendation Reports	482
Effective Design	452	■ GUIDELINES for Recommendation Reports	482
■ GUIDELINES for Designing Instructions	452	Justification Reports	484
Introduction-Body-Conclusion Structure	453	■ GUIDELINES for Justification Reports	484
INTRODUCTION 454 • BODY: REQUIRED STEPS 454 • CONCLUSION 454		Peer Review Reports	486
Online and Social Media Instructions	457	■ GUIDELINES for Peer Review Reports	486
		■ CHECKLIST Informal Reports	486
		■ PROJECTS	487
		21 Formal Analytical Reports	489
		Considering Audience and Purpose	491
		Typical Analytical Problems	491

Causal Analysis: “Why Does X Happen?”	492	Audience and Use Profile	514
CASE The Reasoning Process in Causal Analysis	492	■ GUIDELINES for Reasoning through an Analytical Problem	527
Comparative Analysis: “Is X OR Y Better for Our Needs?”	492	■ CHECKLIST Analytical Reports	528
CASE The Reasoning Process in Comparative Analysis	492	■ PROJECTS	529
Feasibility Analysis: “Is This a Good Idea?”	493	22 Proposals	531
CASE The Reasoning Process in Feasibility Analysis	493	Considering Audience and Purpose	532
Combining Types of Analysis	494	The Proposal process	533
Elements of an Effective Analysis	494	CASE Submitting a Competitive Proposal	534
Clearly Identified Problem or Purpose	494	Types of Proposals	535
Adequate but Not Excessive Data	494	Planning Proposals	536
Accurate and Balanced Data	495	Research Proposals	536
Fully Interpreted Data	497	Sales Proposals	540
Subordination of Personal Bias	497	Elements of a Persuasive Proposal	540
Appropriate Visuals	497	A Forecasting Title or Subject Line	540
Valid Conclusions and Recommendations	497	Background Information	542
Self-Assessment	500	Statement of the Problem	542
Structuring a Formal Report	500	Description of Solution	542
Introduction	501	A Clear Focus on Benefits	542
Body	502	Honest and Supportable Claims	543
SOURCES OF EMF EXPOSURE 503 • PHYSIOLOGIC EFFECTS AND HEALTH RISKS FROM EMF EXPOSURE 505 • DEBATE OVER QUALITY, COST, AND STATUS OF EMF RESEARCH 506 • VIEWS FROM THE POWER INDUSTRY AND THE PUBLIC 508 • RISK-AVOIDANCE MEASURES BEING TAKEN 508		Appropriate Detail	544
Conclusion	509	Readability	544
SUMMARY AND OVERALL INTERPRETATION OF FINDINGS 509 • RECOMMENDATIONS 510		A Tone That Connects with Readers	544
Front Matter and End Matter Supplements	511	Visuals	544
Front Matter	511	Accessible Page Design	545
LETTER OF TRANSMITTAL 511 • TITLE PAGE 511 • TABLE OF CONTENTS 512 • LIST OF TABLES AND FIGURES 512 • ABSTRACT OR EXECUTIVE SUMMARY 512		Supplements Tailored for a Diverse Audience	545
Text of the Report	512	Proper Citation of Sources and Contributors	546
End Matter	512	Structuring a Proposal	546
GLOSSARY 512 • APPENDICES 513 • REFERENCES OR WORKS CITED LIST 513		Introduction	547
A Situation Requiring an Analytical Report	513	Body	549
The Situation	513	Conclusion	551
		A Situation Requiring a Formal Proposal	551
		The Situation	551
		Audience and Use Profile	552
		■ GUIDELINES for Proposals	563
		■ CHECKLIST Proposals	564
		■ PROJECTS	565

23 Oral Presentations and Video Conferencing 566

Advantages and Drawbacks of Oral Presentations 568

Avoiding Presentation Pitfalls 568

Planning Your Presentation 569

Analyze Your Audience and Purpose 569

Analyze Your Speaking Situation 571

Select a Type of Presentation 571

INFORMATIVE PRESENTATIONS 572 • TRAINING/
INSTRUCTIONAL PRESENTATIONS 572 • PERSUASIVE
PRESENTATIONS 572 • ACTION PLAN
PRESENTATIONS 572 • SALES PRESENTATIONS 573

Select a Delivery Method 573

THE MEMORIZED DELIVERY 573 • THE IMPROMPTU
DELIVERY 573 • THE SCRIPTED DELIVERY 573 • THE
EXTEMPORANEOUS DELIVERY 574

Preparing Your Presentation 575

Research Your Topic 575

Aim for Simplicity and Conciseness 575

Anticipate Audience Questions 575

Outline Your Presentation 575

INTRODUCTION 576 • BODY 576 • CONCLUSION 576

Planning Your Visuals and Choosing a

Media Format 577

Decide Which Visuals to Use and Where to
Use Them 578

Create a Storyboard 578

Decide Which Visuals You Can
Realistically Create 578

BE SELECTIVE 579 • MAKE VISUALS EASY TO READ
AND UNDERSTAND 579 • USE THE RIGHT APP TO
PREPARE YOUR VISUALS 580

Choose the Right Media Format 580

Using Powerpoint and Other Presentation Apps 582

When and How to Use Handouts 583

Ethics and the Use of Presentation Apps 583

CASE PowerPoint and the Space Shuttle
Columbia Disaster 585

■ GUIDELINES for Using Presentation Apps 585

Delivering Your Presentation 586

Rehearse Your Delivery 586

Check the Room and Setting Beforehand 587

Cultivate the Human Landscape 587

GET TO KNOW YOUR AUDIENCE 587 • BE
REASONABLE 587 • DISPLAY ENTHUSIASM AND
CONFIDENCE 587 • DON'T PREACH 587

Keep Your Listeners Oriented 587

OPEN WITH A CLEAR AND ENGAGING
INTRODUCTION 587 • GIVE CONCRETE
EXAMPLES 588 • PROVIDE EXPLICIT
TRANSITIONS 588 • REVIEW AND INTERPRET 588

Plan for How You Will Use Any Noncomputer

Visual Aids 588

PREPARE 589 • ORGANIZE 589 • AVOID LISTENER
DISTRACTION 589

Manage Your Presentation Style 589

USE NATURAL MOVEMENTS AND REASONABLE
POSTURES 589 • ADJUST VOLUME,
PRONUNCIATION, AND RATE 589 • MAINTAIN
EYE CONTACT 589

Manage Your Speaking Situation 590

BE RESPONSIVE TO LISTENER FEEDBACK 590 •
STICK TO YOUR PLAN 591 • LEAVE LISTENERS WITH
SOMETHING TO REMEMBER 591 • ALLOW TIME FOR
QUESTIONS AND ANSWERS (Q & A) 591

■ **CONSIDER THIS Cross-Cultural Audiences May Have
Specific Expectations 590**

■ **GUIDELINES for Delivering an Oral Presentation
and Managing Listener Questions 591**

Video Conferencing 592

■ **GUIDELINES for Video Conferencing 593**

■ **CHECKLIST Oral Presentations 593**

■ **PROJECTS 594**

24 Blogs, Wikis, and Web Pages 596

Considering Audience and Purpose 598

Blogs 599

Internal Blogs 599

External Blogs 599

Wikis 600

Internal Wikis 600

External Wikis 600

■ **GUIDELINES for Writing and Using Blogs
and Wikis 601**

Web Pages 601

How People Read Web Pages 602

Writing and Designing for the Web 603

■ **GUIDELINES for Writing Web Pages 604**

■ **GUIDELINES for Designing Web Pages 605**

Techniques and Technologies for Creating Web Sites 605

Planning Web Sites Using Storyboarding 606

Teamwork When Creating Web Sites	606	■ GUIDELINES for Quoting	628
Tools for Creating Web Pages	607	Paraphrasing the Work of Others	630
Global, Ethical, and Legal Considerations	607	■ GUIDELINES for Paraphrasing	630
Global Considerations	607	What You Should Document	631
Ethical Considerations	607	How You Should Document	632
Legal Considerations	608	MLA Documentation Style	632
■ GUIDELINES for Global, Ethical, and Legal Considerations on the Web	608	MLA Parenthetical References	632
■ CHECKLIST Writing and Designing for Blogs, Wikis, and the Web	609	MLA Works Cited Entries	633
■ PROJECTS	610	MLA Sample Works Cited Pages	643
		Discussion of Figure A.4	646
		APA Documentation Style	646
25 Social Media	612	APA Parenthetical References	647
Considering Audience and Purpose	614	APA Reference List Entries	647
Audience as Contributor	616	APA Sample Reference List	655
Personal versus Workplace Uses of Social Media	616	Discussion of Figure A.5	657
Using Social Media for Technical Communication	617	Appendix B: A Quick Guide to Grammar, Usage, and Mechanics	658
Customer Review Sites	617	Grammar	658
Facebook	617	Sentence Fragments	658
Google+	617	Run-On Sentences	659
Instagram	618	Comma Splices	659
LinkedIn and Other Job Sites	618	Faulty Agreement—Subject and Verb	660
Twitter	619	Faulty Agreement—Pronoun and Referent	661
YouTube	620	Dangling and Misplaced Modifiers	661
Instructional Videos for Social Media	620	Faulty Parallelism	662
■ GUIDELINES for Creating Instructional Videos for Social Media	621	Faulty Coordination	663
Credibility and Legal Issues	622	Faulty Subordination	663
■ GUIDELINES for Writing and Using Social Media	623	Faulty Pronoun Case	664
■ CHECKLIST Social Media	624	Punctuation	665
■ PROJECTS	624	Period	665
		Question Mark	665
		Exclamation Point	665
		Semicolon	665
		Colon	666
		Comma	666
		Apostrophe	669
		Quotation Marks	670
		Ellipses	671
Part 5 Resources for Technical Writers	626		
Appendix A: A Quick Guide to Documentation	627		
Taking Notes	627		
■ GUIDELINES for Taking Notes	627		
Quoting the Work of Others	628		

XX Detailed Contents

Brackets	671	Transitions	677
Italics	671	Use Transitional Expressions	677
Parentheses	672	Repeat Key Words and Phrases	677
Dashes	672	Use Forecasting Statements	677
Mechanics	672	Lists	677
Abbreviation	672	Embedded Lists	677
Hyphenation	673	Vertical Lists	678
Capitalization	673		
Numbers and Numerals	674		
Spelling	675	Works Cited	680
Usage	675	Index	685

Preface

Whether digital, face-to-face, handwritten, or printed, workplace communication is more than a value-neutral exercise in “information transfer.” Workplace communication is also a complex social transaction. From reports to proposals, job applications to email messages, video chats to oral presentations, every rhetorical situation has its own specific interpersonal, ethical, legal, and cultural demands. Moreover, today’s workplace professional needs to be a skilled communicator and a discriminating consumer of information, skilled in methods of inquiry, retrieval, evaluation, and interpretation essential to informed decision making.

Designed in response to these issues, *Technical Communication*, Fifteenth Edition, addresses a wide range of interests for classes in which students from a variety of majors are enrolled. The text explains, illustrates, and applies rhetorical principles to an array of assignments—from memos, résumés, and email to formal reports and proposals. To help students develop awareness of audience and accountability, exercises incorporate the problem-solving demands typical in college and on the job. Self-contained chapters allow for various course plans and customized assignments.

What’s New to the Fifteenth Edition?

Technical Communication, Fifteenth Edition, has been thoroughly revised to account for the latest innovations in workplace communication and today’s technologically sophisticated, diverse, and global workforce. Students will benefit from a variety of new content and features in this edition:

- **The latest coverage of digital communication and social media.** As in every edition of *Technical*

Communication, the latest innovations in digital communication have been woven throughout the book (for example, using JAWS to make Web pages accessible for visually impaired users; the increasingly common use of video interviews; the use of PDF files for most online instructional material; using collaborative writing apps and spaces such as Google Drive; and more). In this edition, we’ve placed a special emphasis on the relationships between social media and technical communication, with social media considerations incorporated into nearly every chapter. In addition, the “Social Media” chapter itself (Chapter 25) has been updated and expanded to include new discussion of workplace uses of Instagram and creating instructional videos for YouTube and other social media, including a new “Guidelines for Creating Instructional Videos for Social Media” box.

- **New discussions on the challenges of assessing credible information when using online sources.** In addition to covering the latest in digital technology, we have included content on the challenges writers and everyday citizens face when using the Internet for research, including discussions in Chapters 7, 8, and 9 (on research) about *confirmation bias* and ways that online information tends to reinforce what people already believe or want to believe.
- **Streamlined topical coverage within chapters.** Although we have not changed the overall structure or sequence of chapters in the book, we have done extensive combining of related sections and reorganizing of topics within chapters for improved accessibility and fewer major sections for students to navigate. As in the previous edition, all major sections are tied

to the Learning Objectives that appear at the beginning of each chapter.

- **An extensively revised chapter on visuals.** Chapter 12, “Designing Visual Information,” now places stronger emphasis on planning visuals by placing the Planning Sheet for Preparing Visuals early in the chapter. In addition, the chapter includes a new section on understanding and creating infographics, as well as a new section on presenting visuals.
- **A revised and expanded chapter on email.** Chapter 14, “Email,” now includes a new section on the three major types of email (primary, transmittal, and formatted), as well as revised and expanded coverage of interpersonal issues when using email, updated coverage of global, ethical, and legal issues related to email, and new and revised sample emails throughout the chapter.
- **A thoroughly revised chapter on oral presentations.** Without changing any of the clear and practical advice on planning, preparing, and delivering oral presentations, Chapter 23, “Oral Presentations and Video Conferencing” has been revised to include a new section on when and how to use handouts during presentations, expanded discussion of the cautions of relying too much on presentation apps, more emphasis on considering the needs of off-site audiences when planning and preparing oral presentations, and updated figures throughout the chapter.
- **Extensively revised Projects.** The end-of-chapter Projects—which continue to be organized into General, Team, Digital and Social Media, and Global categories—have been fully revised for this edition.

Hallmarks of *Technical Communication*

Technical Communication, Fifteenth Edition, retains—and enhances or expands—the features that have made it a best-selling text for technical

communication over fourteen editions. These include the following:

- **Complete coverage for any course in technical communication, business communication, or professional writing.** The topics move from basic foundational concepts to chapters on research, organization, style, visual characteristics, and document design, and finally to specific documents and applications. The appendix includes thorough coverage of the most recent MLA and APA documentation styles, and a handbook of grammar, mechanics, and usage.
- **A reader-friendly writing style that presents all topics clearly and concisely.** Simple, straightforward explanations of concepts and audience/purpose analyses of specific document types help differentiate technical communication from academic writing.
- **The most current and thorough coverage of workplace technologies, ethics, and global considerations in the workplace.** Always prominent in the book, these three topics have been updated and expanded throughout to keep up with the changes in the contemporary workplace.
- **Strong coverage of information literacy.** According to the American Library Association Presidential Committee on Information Literacy, information-literate people “know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them.” Critical thinking—the basis of information literacy—is covered intensively in Part II and integrated throughout the text, especially in discussions about online information.
- **A focus on applications beyond the classroom.** Clear ties to the workplace have always been a primary feature of this book. This edition includes examples from everyday on-the-job situations and sample documents, as well

as dedicated chapters on ethics, teamwork, and global issues. Each chapter opener includes a quote from an on-the-job communicator.

- **Emphasis on the humanistic aspects of technical communication.** Technical communication is ultimately a humanistic endeavor, not just a set of job-related transcription tasks, with broad societal implications. Accordingly, situations and sample documents in this edition address complex technical and societal issues such as climate change, public health issues, environmental and energy topics, digital technology, and genomics.
- **Plentiful model documents and other useful figures throughout the book.** Descriptions and instructions for creating technical documents are accompanied by clear, annotated examples. Graphic illustrations throughout make abstract concepts easy to understand.
- **Highly praised pedagogical features.** Pedagogical features, including chapter-opening Learning Objectives, summary Guidelines boxes, real-world Consider This boxes, Case Studies, annotated figures, summary marginal notes, and end-of-chapter Checklists and Projects reinforce chapter topics. These features are outlined in more detail below.

How this Book is Organized

Technical Communication is designed to allow instructors maximum flexibility. Each chapter is self-contained, and each part focuses on a crucial aspect of the communication process. Following are the five major parts of the book:

- **Part 1: Communicating in the Workplace** treats job-related communication as a problem-solving process. Students learn to think critically about the informative, persuasive, and ethical dimensions of their communications. They also learn how to adapt to the interpersonal challenges of collaborative work, and to address the various needs and expectations of global audiences.

- **Part 2: The Research Process** treats research as a deliberate inquiry process. Students learn to formulate significant research questions; to explore primary and secondary sources in hard copy and digital form; to evaluate and interpret their findings; and to summarize for economy, accuracy, and emphasis. Students are asked to think critically about online information and to consider the credibility and truthfulness of the source.
- **Part 3: Organization, Style, and Visual Design** offers strategies for organizing, composing, and designing messages that readers can follow and understand. Students learn to control their material and develop a readable style. They also learn about the rhetorical implications of graphics and page design—specifically, how to enhance a document’s access, appeal, and visual impact for audiences who need to locate, understand, and use the information successfully.
- **Part 4: Specific Documents and Applications** applies earlier concepts and strategies to the preparation of print and electronic documents and oral presentations. Various letters, memos, reports, and proposals offer a balance of examples from the workplace and from student writing. Each sample document has been chosen so that students can emulate it easily. Chapters on email, Web pages, and social media emphasize the ubiquity of digital communication in today’s workplace.
- **Part 5: Resources for Writers** includes “A Quick Guide to Documentation,” which provides general guidance as well as specific style guides and citation models for MLA and APA styles, and “A Quick Guide to Grammar, Usage, and Mechanics,” which provides a handy resource for answering questions about the basic building blocks of writing.

Learning Enhancement Features

This book is written and designed to be a highly accessible document, so that readers can “read to learn and learn to do.” *Technical Communication*,

Fifteenth Edition, includes the following learning enhancement features that will help students access the material easily and use the ideas to become effective technical communicators:

- **Chapter opening quotations** demonstrate the real-world applications of each chapter's topic.
- **Learning Objectives** at the beginning of each chapter tie in with the main headed sections of each chapter and provide a set of learning goals for students to fulfill.
- **Guidelines boxes** help students prepare specific documents by synthesizing the chapter's information.
- **Cases and sample situations** encourage students to make appropriate choices as they analyze their audience and purpose and then compose their document.
- **Sample documents** model various kinds of technical writing, illustrating for students what they need to do. Captions and annotations identify key features in sample documents.
- **Consider This boxes** provide interesting and topical applications of the important issues discussed in various chapters, such as collaboration, technology, and ethics.
- **Notes callouts** clarify up-to-the-minute business and technological advances and underscore important advice.
- **Marginal notes** summarize larger chunks of information to reinforce key chapter concepts.
- **Checklists** promote careful editing, revision, and collaboration. Students polish their writing by reviewing key criteria for the document and by referring to cross-referenced pages in the text for more information on each point.
- **General, team, global, and digital and social media Projects** at each chapter's end help students apply what they have learned.

Revel™

Revel is an interactive learning environment that deeply engages students and prepares them for class. Media and assessment integrated directly within the authors' narrative lets students read, explore interactive content, and practice in one continuous learning path. Thanks to the dynamic reading experience in Revel, students come to class prepared to discuss, apply, and learn from instructors and from each other.

The Revel features accompanying *Technical Communication* are as follows:

- **Journal Prompts** appear at the end of every major section in each chapter, encouraging hands-on practice through writing. Students are asked to perform brief writing activities that involve reflection, brainstorming, drafting a portion of a document, or analyzing a particular document.
- **Multiple-Choice Quizzes** help reinforce facts and concepts as students move through each major section in each chapter (the end of each major section quiz features three questions directly tied to that section) and then again at the end of the chapter (the end-of-chapter quiz provides five questions covering various sections of the chapter).
- **Table Drag-and-Drop** activities help students remember information by matching terms with their descriptions or placing parts of complex documents in the right order.
- **Fill-in-the-Blank and True/False Quick Check** activities are directly tied to the Guidelines boxes that appear in every chapter and provide a quick means of remembering concepts presented in these important boxes.
- **Shared Writing Activities** at the end of each chapter encourage students to share, discuss, and critique each other's work.

Learn more about Revel

www.pearson.com/revel

Pearson English Assignments Library

Available with your adoption of any © 2019 or © 2020 Pearson English course in Revel is the English Assignments Library comprising 500 essay and Shared Media prompts:

- A series of 300 fully editable essay assignments invite students to write on compelling, wide-ranging writing topics. You can choose from an array of writing prompts in the following genres or methods of development: Argument/Persuasion; Comparison/Contrast; Critique/Review; Definition; Description; Exposition; Illustration; Narration; Process Analysis; Proposal; and Research Project. Assignments can be graded using a rubric based on the WPA Outcomes for First-Year Composition. You can also upload essay prompts and/or rubrics of your own.
- 200 Shared Media assignments ask students to interpret and/or produce various multimedia texts to foster multimodal literacy. Shared Media activities include analyzing or critiquing short professional videos on topics of contemporary interest; posting brief original videos or presentation slides; and sharing original images—such as posters, storyboards, concept maps, or graphs.

Format Options

Below are format options by which Technical Communication is available.

Revel Access Card

Students can purchase a physical Revel access code card at their campus bookstore.

- **INSTANT ACCESS** Students can purchase access directly from Pearson to start their subscription immediately.

- **PRINT UPGRADE** Students can choose to have a printed loose-leaf version sent to them with free shipping

Revel Combo Card

The Revel Combo provides the Revel access code card plus a coupon for the loose-leaf print reference (delivered by mail). This option is perfect for students who need to purchase all of their materials from the campus bookstore.

Print Rental

Students can rent the text from their campus bookstore or directly from Pearson. Barnes & Noble and Follett bookstores are partners in this program.

Rent to Own

If a student has rented the text from either Pearson or their campus bookstore, they can choose to permanently own the text by paying a flat ownership fee.

EBook

Students can choose to purchase or rent the EBook version of the text.

Supplements

Make more time for your students with instructor resources that offer effective learning assessments and classroom engagement. Pearson's partnership with educators does not end with the delivery of course materials; Pearson is there with you on the first day of class and beyond. A dedicated team of local Pearson representatives will work with you to not only choose course materials but also integrate them into your class and assess their effectiveness. Our goal is your goal—to improve instruction with each semester.

Pearson is pleased to offer the following resources to qualified adopters of *Technical Communication*. Several of these supplements are available to instantly download from Revel or on the Instructor Resource Center (IRC); please visit the IRC at www.pearson.com/us to register for access.

- **TEST BANK** Evaluate learning at every level. Reviewed for clarity and accuracy, the Test Bank measures this material's learning objectives with multiple-choice, true/false, and fill-in-the-blank questions. You can easily customize the assessment to work in any major learning management system and to match what is covered in your course. Word and BlackBoard versions are available on the IRC.
- **PEARSON MYTEST** This powerful assessment generation program includes all of the questions in the Test Bank. Quizzes and exams can be easily authored and saved online and then printed for classroom use, giving you ultimate flexibility to manage assessments anytime and anywhere. To learn more, visit www.pearsonmytest.com.
- **INSTRUCTOR'S RESOURCE MANUAL** by **Lee Scholder, M.S., J.D.** Create a comprehensive roadmap for teaching classroom, online, or hybrid courses. Designed for new and experienced instructors, the Instructor's Resource Manual includes overall teaching strategies (including general teaching ideas, advice on how to use the Revel features accompanying *Technical Communication*, and sample syllabi) and chapter-specific resources (including chapter overviews, Learning Objectives, teaching tips, additional exercises, and quizzes). Available within Revel and on the IRC.
- **POWERPOINT PRESENTATION** Make lectures more enriching for students. The accessible PowerPoint Presentation includes a full lecture outline and figures from the textbook and Revel edition. Available on the IRC.

Acknowledgments

From prior editions, we wish to thank University of Massachusetts colleague Professor Peter Owens for his input on libel law in Chapter 4, Glenn Tarullo

for sharing his decisions about the writing process in Chapter 6, and librarians Shaleen Barnes and Ross LaBaugh for their inspirations about the research process in Chapter 7. Also, thank you to Daryl Davis from Northern Michigan University for help in clarifying the descriptive abstract distinctions made in Chapter 9.

Many of the refinements in this and earlier editions were inspired by generous and insightful suggestions from our reviewers. For this edition, we are grateful for the comments of the following reviewers:

- Mikayla Beaudrie, University of Florida
- Mary Faure, The Ohio State University
- William Matter, Richland College
- Ida Patton, Arkansas State University
- Nancy Riecken, Ivy Tech Community College
- Terri Thorson, Arizona State University
- Nicole Wilson, Bowie State University

We thank our colleagues and students at the University of Massachusetts and the University of Minnesota, respectively, for their ongoing inspiration. This edition is the product of much guidance and support from Pearson Education, Ohlinger Publishing Services, and Integra-Chicago. From Aron Keesbury, Cynthia Cox, Maggie Barbieri, Kate Hoefler, Rachel Harbour, Tom Stover, Chris Fegan, Joe Croscup, Carmen Altes, and Valerie Iglar-Mobley, we received outstanding editorial guidance, support, and project management. Many thanks to freelance development editor Bruce Cantley for his generous and unflagging development help and valuable ideas.

From John M. Lannon, special thanks to those who help me keep going: Chega, Daniel, Sarah, Patrick, and Zorro. From Laura J. Gurak, thanks greatly to Nancy, to my friends and family, and to my four-legged companions for the ongoing support and friendship.

—John M. Lannon and Laura J. Gurak

Part 1

Communicating in the Workplace

- 1 Introduction to Technical Communication
- 2 Meeting the Needs of Specific Audiences
- 3 Persuading Your Audience
- 4 Weighing the Ethical Issues
- 5 Teamwork and Global Considerations
- 6 An Overview of the Technical Writing Process

Chapter 1

Introduction to Technical Communication



“Writing is essential to my work. Everything we do at my company results in a written product of some kind—a formal technical report, a summary of key findings, recommendations and submissions to academic journals or professional associations. We also write proposals to help secure new contracts. No matter if the document is to be delivered in print or online, writing is the most important skill we seek in potential employees and nurture and reward in current employees. It is very hard to find people with strong writing skills, regardless of their academic background.”

—Paul Harder, *President, mid-sized consulting firm*

What Is Technical
Communication?
Main Features of Technical
Communication

Purposes of Technical
Communication
Preparing Effective
Technical Documents

Projects



Learning Objectives

1.1 Define technical communication

1.2 Identify the main features of technical communication

1.3 Explain the purposes of technical communication

1.4 Describe the four tasks involved in preparing effective technical documents

What Is Technical Communication?

1.1 Define technical communication

Technical communication is the exchange of information that helps people interact with technology and solve complex problems. Almost every day, we make decisions or take actions that depend on technical information. When we purchase any new device, from a digital camera to a Wi-Fi range extender, it's the setup information that we look for as soon as we open the box. Before we opt for the latest in advanced medical treatment, we go online and search for all the information we can find about this treatment's benefits and risks. From banking systems to online courses to business negotiations, almost every aspect of daily life involves technology and technical information. Because our technologies are so much a part of our lives, we need information that is technically accurate and, importantly, easy to understand and use.

Technical communication serves various needs in various settings. People may need to perform a task (say, assemble a new exercise machine), answer a question (say, about the safety of a flu shot), or make a decision (say, about suspending offshore oil drilling). In the workplace, we are not only consumers of technical communication but also producers. To be effective and useful, any document or presentation we prepare (memo, letter, report, Web page, PowerPoint presentation) must advance the goals of our readers, viewers, or listeners.

Figure 1.1 shows a sampling of the kinds of technical communication you might encounter or prepare, either on the job or in the community.

Technical communication helps us interact with technology in our daily lives

Technical communication helps us solve complex problems

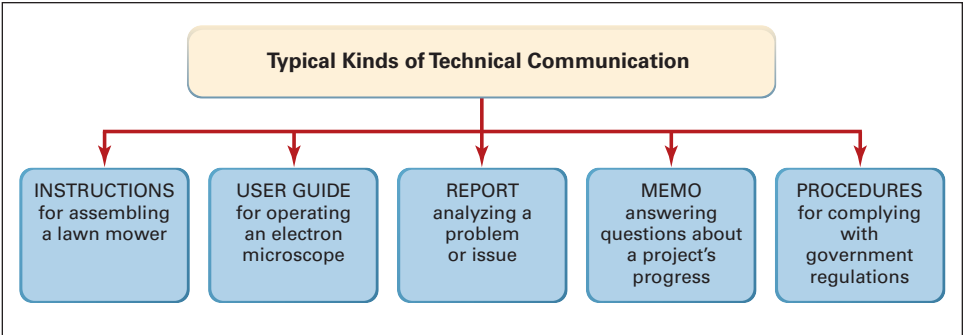


Figure 1.1 Technical Communication Serves Various Needs

Technical Communication Is a Digital and a Human Activity

Digital communication requires attention to style and tone

In today’s workplace, with all of the digital communication available to us, we communicate in writing more than ever. Email, texts, chat sessions, social media and blog posts, document review features (such as Word’s track changes when editing group documents): These technologies are a daily part of our workplace communication. Digital technologies make it easy for people to collaborate, especially across different time zones or work schedules. Yet in digital formats, we often communicate with such speed that we forget about basic professional standards for workplace communication. For instance, the informal or even humorous tone we use to text our friends is typically not appropriate for a work-related email. An unclear or inaccurate email sent late in the day when you are rushing to get out of the office could easily cause a safety error or legal problem; an inappropriate tone might result in wasted hours resolving an interpersonal situation instead of working on the project.

Online research is not the same as critical thinking

Digital technology also provides plenty of ways, from simple to sophisticated, to research and find information. Doing a Google or other online search, however, is not a substitute for critical thinking skills. The big questions involved in most workplace projects are questions that require us to take our research findings and make the information meaningful by asking questions such as these:

Questions that only a person can answer

- Which information is relevant to this situation?
- Can I verify the credibility and accuracy of this source?
- What does this information mean?
- What action does it suggest?
- How does this information affect me or my colleagues?
- With whom should I share it?
- How might others interpret this information?

Technical Communication Reaches a Global Audience

Linked as we are through our transportation systems and especially our digital technologies, the global community shares social, political, and financial interests. We can no longer pretend to operate solely within regional or national boundaries. Organizations are increasingly multinational; employees work on teams with colleagues from around the globe. The best collaborations happen when communication is tuned to reflect the diversity of people, countries, and cultures that make up the organization and the project team.

Write to a diverse audience

Understanding the point of view of another culture takes time. Even within specific cultures, people are individuals and can't be lumped together into one stereotype. As researchers in intercultural communication remind us, a key component is the communication's *context* (Collier 9; Martin 6). For instance, people communicate differently in the context of being at home than they do when at work.

Consider the cultural context

Cultures differ over which communication behaviors and approaches are appropriate for business relationships, including contract and other legal negotiations, types of documents (e.g., whether to use email, a memo, or a letter), tone and style, use of visuals, and so forth. An effective and appropriate communication style in one culture may be considered inappropriate or even offensive in another. In the workplace, communication tends to be patterned by a set of norms that have developed over time in different cultures. As one business expert notes,

Understand that communication behaviors differ across cultures

Every aspect of global communication is influenced by cultural differences. Even the choice of medium used to communicate may have cultural overtones. For example, it has been noted that industrialized nations rely heavily on electronic technology and emphasize written messages over oral or face-to-face communication. Certainly the United States, Canada, the UK and Germany exemplify this trend. But Japan, which has access to the latest technologies, still relies more on face-to-face communications than on the written mode (Goman 1).

This expert goes on to explain how “[i]n some cultures, personal bonds and informal agreements are far more binding than any formal contract. In others, the meticulous wording of legal documents is viewed as paramount” (Goman 2).

The documents you research and write at work need to reflect an understanding and sensitivity to cultural differences and the communication approaches of your teammates at work and your readers (i.e., your customers or clients). Your best bet is to learn as much as you can by listening and observing; asking trusted colleagues; and reading magazines, newspaper articles, blog posts, and other such information (just be sure the information is written by someone with expertise and experience in international communication). You might also try an online short course on international communication. For more on cross-cultural communication, see Chapters 3 and 5 as well as the Global Projects at the end of each chapter.

Take the time to learn about cultural differences

Technical Communication Is Part of Most Careers

Whatever your job description, you should expect to be evaluated at least in part on your written and oral communication skills. Even if you don't anticipate an actual career in writing, every job involves being a technical communicator at some point. You can expect to encounter situations such as the following:

Most professionals serve as part-time technical communicators

- As a medical professional, psychologist, social worker, or accountant, you will keep precise records that are increasingly a basis for legal action.
- As a scientist, you will report on your research and explain its significance.
- As a manager, you will write memos, personnel evaluations, and inspection reports; you will also give oral presentations.
- As a lab or service technician, you will keep daily activity records and help train coworkers in installing, using, or servicing equipment.
- As an attorney, you will research and interpret the law for clients.
- As an engineer or architect, you will collaborate with colleagues as well as experts in related fields before presenting a proposal to your client. (For example, an architect's plans are reviewed by a structural engineer who certifies that the design is sound.)
- As an employee or intern in the nonprofit sector (an environmental group or a government agency), you will research important topics and write brochures, press releases, or handbooks for clients.
- As an employee of any company or organization, you will write status reports, trip reports, memos, proposals, instructions, and many other forms of technical communication.

The more you advance in your field, the more you will need to share information and establish contacts. Managers and executives spend much of their time negotiating, setting policies, and promoting their ideas—often among diverse cultures around the globe.

In addition, most people can expect to work for several different employers throughout their career. Each employer will have questions such as the following:

Employers seek portable skills

- Can you write and speak effectively in a variety of formats and to a range of different people?
- Can you research information, verify its accuracy, figure out what it means, and shape this information for your readers' specific purposes?
- Can you work on a team with people from diverse backgrounds?
- Can you get along with, listen to, and motivate others?
- Are you flexible enough to adapt to rapid changes in business conditions and technology?
- Can you market yourself and your ideas persuasively?
- Are you ready to pursue lifelong learning and constant improvement?

Although technical expertise and experience is important, the above items, most especially the first two (communication and critical thinking), are top among the portable skills employers seek in today's college graduates.

Technical Communicators Play Many Roles

Full-time technical communicators work in many capacities. Job titles include information architect, user experience engineer, technical writer, technical editor, documentation specialist, Web development specialist, and content developer. In the public sector, government agencies (federal, state, and local) hire technical communicators to take technical research and make it accessible to nonexpert readers by writing and designing blog and social media posts, podcasts, Web pages, short reports, and brochures. In the private sector, technical communicators can be found across the spectrum, including in the highly regulated banking, pharmaceutical, and medical device industries, where these skilled communicators create specifications, procedures, and documentation for global audiences. You will also find technical communicators employed at retail companies such as Target and Best Buy to work on websites and technical documentation and in every high-tech company such as Microsoft and Apple where teams of technical communicators are responsible for user manuals, online help, customer support, and much more.

Technical communicators also edit reports for punctuation, grammar, style, and logical organization. They may oversee publishing projects, coordinating the efforts of writers, visual artists, graphic designers, content experts, and lawyers to produce a complex manual, report, or proposal. Given their broad range of skills, technical communicators often enter related fields such as technical or scientific publishing, magazine editing, video production (including writing scripts), training, and college teaching.

The variety of job titles of technical communicators

What technical communicators do

Main Features of Technical Communication

1.2 Identify the main features of technical communication

Almost any form of technical communication displays certain shared features: The communication is reader-centered, accessible and efficient, often produced by teams, and delivered in a variety of digital and hard copy formats.

Reader-Centered

Unlike poetry, fiction, or college essays, a technical document rarely focuses on the writer's personal thoughts and feelings. This doesn't mean your document should have no personality (or voice), but it does mean that the needs of your readers come first.

Focus on the reader, not the writer

What readers expect

Workplace readers typically are interested in “who you are” only to the extent that they want to know what you have done, what you recommend, or how you speak for your company. Reader-centered documents focus on what people need to learn, do, or decide. For example, while the history of how this product was invented may be of interest to the writer, instructions for assembling a new workstation desk should focus on what readers need to do—assemble their desk and start using it. Writing from a reader-centered perspective takes practice and attention (the rest of this text will emphasize reader-centered writing and design to help you get the idea).

Accessible and Efficient

Make documents easy to navigate and understand

Readers expect to find the information they need and to have questions answered clearly. For instance, the document shown in Figure 1.2 is written and designed so that a nontechnical audience can find and follow the information. Instead of long technical passages, the content is presented in short chunks, answering the main question readers will ask (how to choose the right model).

An accessible and efficient technical document includes elements such as those displayed in Figure 1.2 as well as others listed below.


Elements that make a document accessible and efficient

- **worthwhile content**—includes all (and only) the information readers need
- **sensible organization**—guides the reader and emphasizes important material
- **readable style**—promotes fluid reading and accurate understanding
- **effective visuals**—clarify concepts and relationships, and substitute for words whenever possible
- **effective page design**—provides heads, lists, type styles, white space, and other aids to navigation
- **supplements (abstract, appendix, glossary, linked pages, and so on)**—allow readers to focus on the specific parts of a long document that are relevant to their purpose

Recognize your legal accountability

Accessible, efficient communication is no mere abstract notion: In the event of a lawsuit, faulty writing is treated like any other faulty product. If your inaccurate, unclear, or incomplete information leads to injury, damage, or loss, you and your company or organization can be held responsible.

NOTE Make sure your message is clear and straightforward—but do not oversimplify. Information designer Nathan Shedroff reminds us that, while clarity makes information easier to understand, simplicity is “often responsible for the ‘dumbing down’ of information rather than the illumination of it” (280). The “sound bytes” that often masquerade as network news reports serve as a good case in point.



Use a Programmable Thermostat Properly

A programmable thermostat is ideal for people who are away from home during set periods of time throughout the week. Through proper use of pre-programmed settings, a programmable thermostat can save you about \$180 every year in energy costs.

How Do You Choose the Right One for You?

To decide which model is best for you, think about your schedule and how often you are away from home for regular periods of time—work, school, other activities—and then decide which of the three different models best fits your schedule:

7-day models are best if your daily schedule tends to change; for example, if children are at home earlier on some days. These models give you the most flexibility and let you set different programs for different days—usually with four possible temperature periods per day.

5+2-day models use the same schedule every weekday, and another for weekends.

5-1-1 models are best if you tend to keep one schedule Monday through Friday and another schedule on Saturdays and Sundays.

Programmable Thermostat Settings

You can use the table below as a starting point for setting energy-saving temperatures, and then adjust the settings to fit your family's schedule and stay comfortable.

Setting	Time	Setpoint Temperature (Heat)	Setpoint Temperature (Cool)
Wake	6:00 a.m.	< 70° F	> 78° F
Day	8:00 a.m.	Setback at least 8° F	Setup at least 7° F
Evening	6:00 p.m.	< 70° F	> 78° F
Sleep	10:00 p.m.	Setback at least 8° F	Setup at least 4° F

Annotations on the right side of the page:

- Overview information summarizes the document's main point
- Heading is phrased as the main question readers will ask
- Paragraphs and sentences are short
- Color is used to highlight key items
- Table provides easy-to-read comparative data

Figure 1.2 An Effective Technical Document Language, layout, and PDF format make the information easy for everyday readers to understand and access.

Source: A Guide to Energy-Efficient Heating and Cooling, Energy Star Program, August 2009.

Often Produced by Teams

Prepare for
teamwork

Technical documents are often complex. Instead of being produced by a lone writer, complex documents usually are created by teams composed of writers, Web designers, engineers or scientists, managers, legal experts, and other professionals. The teams might be situated at one site or location or distributed across different job sites, time zones, and countries.

Delivered in Paper and Digital Versions

Select the
appropriate
medium or
combination of
media

Technical documents can be delivered in a variety of media such as print (hard copy), Web pages, PDF documents, e-books, podcasts, blog and social media posts, tweets, and online videos. In many cases, there is no clear distinction between print and digital communication. Figure 1.2 is a good example: The document is in PDF format and can be read online, downloaded for later reading, or downloaded and printed on paper. Technical communicators must write well but must also be able to think about page design and media choices.

Purposes of Technical Communication

1.3 Explain the purposes of technical communication

What purpose
or combination
of purposes will
your document
serve?

Most forms of technical communication address one of three primary purposes: (1) to anticipate and answer questions (inform your readers); (2) to enable people to perform a task or follow a procedure (instruct your readers); or (3) to influence people's thinking (persuade your readers). Often, as in Figure 1.2, these purposes will overlap.

Documents That Inform

Anticipate
and answer
your readers'
questions

Informational documents are designed to inform—to provide information that answers readers' questions clearly and efficiently. Figure 1.2 is primarily informational. It is designed for a wide audience of readers who may have questions but know little about the technical details.

Documents That Instruct

Enable your
readers to
perform certain
tasks

Instructional documents help people do something: assemble a new computer, perform CPR, or, in the case of Figure 1.2, choose and use a programmable thermostat. This page, part of a longer document on energy-efficient heating and cooling, provides basic instructions to help people decide how to choose the most suitable thermostat

for their needs. Action verbs and phrases, such as “think about your schedule” and “decide which of the three models best fits,” are clear and direct. A simple table provides visual instructions on how and when to set thermostat temperatures.

Documents That Persuade

Persuasion encourages people to take a desired action. While some documents (such as a sales letter) are explicitly persuasive, even the most technical of documents can have an implicitly persuasive purpose. The first paragraph of Figure 1.2, for example, encourages readers to use a programmable thermostat by pointing out how much a person could save in yearly energy bills.

Motivate your readers

Preparing Effective Technical Documents

1.4 Describe the four tasks involved in preparing effective technical documents

Whether you are a full-time communication professional or an engineer, nurse, scientist, technician, legal expert, or anyone whose job requires writing and communicating, the main question you face is this: “How do I prepare the right document for this group of readers and this particular situation?”

A main question you must answer

Other chapters in this book break down the process in more detail. In Chapter 2, for example, you will learn about analyzing the audience and purpose for any document and situation. Later, you will see examples of document types typically used in workplace environments. Regardless of the type, producing an effective document typically requires that you complete the four basic tasks depicted in Figure 1.3 and described below.

- **Deliver information readers can use**—because different people in different situations have different information needs (Chapter 2)
- **Use persuasive reasoning**—because people often disagree about what the information means and what action should be taken (Chapter 3)
- **Weigh the ethical issues**—because unethical communication lacks credibility and could alienate readers (Chapter 4)
- **Practice good teamwork**—in most professions, documents are not produced by one person but by a team of colleagues from different parts of the organization (Chapter 5)

A workplace communicator's four basic tasks

The short cases that follow illustrate how a typical professional confronts these tasks in her own day-to-day communication on the job.

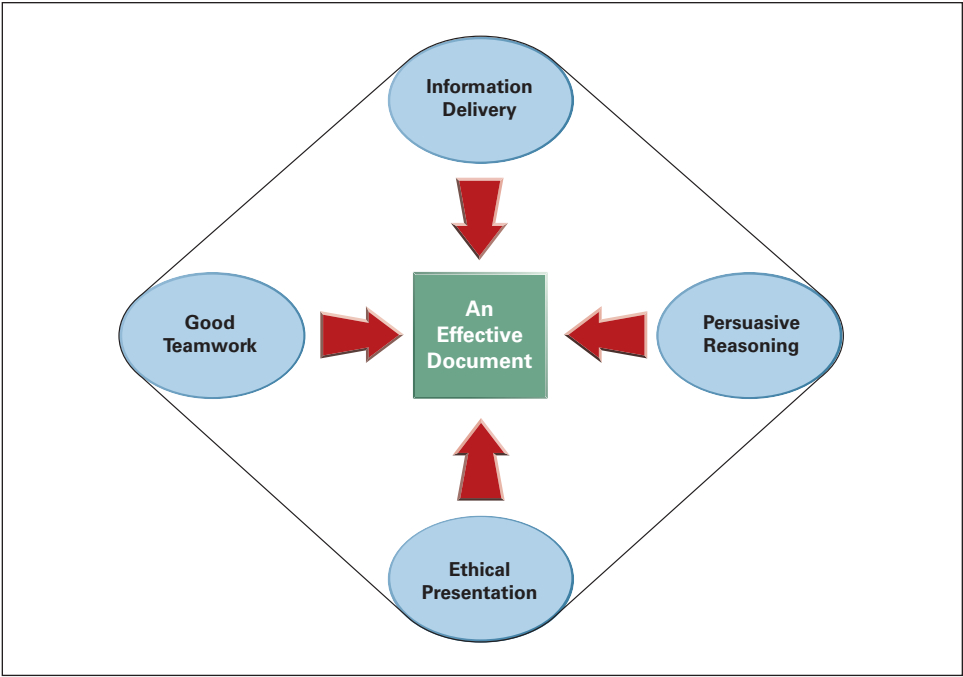


Figure 1.3 How an Effective Document Is Produced

Case

Providing Information Readers Can Use

“Can I provide exactly what readers need?”

Sarah Burnes was hired two months ago as a chemical engineer for Millisun, a leading maker of film and digital imaging supplies and equipment. Sarah’s first major assignment is to evaluate the plant’s incoming and outgoing water. (Waterborne contaminants can taint these products during the production process, and the production process itself can pollute outgoing water.) Management wants an answer to this question: How often should we change water filters? The filters are expensive and hard to change, sometimes halting production for up to a day at a time. The company wants as much “mileage” as possible from these filters, without either incurring government fines or tainting its film production.

Sarah will study endless printouts of chemical analysis, review current research and government regulations, do some testing of her own, and consult with her colleagues. When she finally determines what all the data indicate, Sarah will prepare a recommendation report for her bosses.

Later, Sarah will collaborate with the company training manager and the maintenance supervisor to prepare a user manual, instructing employees on how to check and change the filters. To cut down any additional design and publishing costs, the company has asked Sarah to design and produce this manual herself (using Adobe InDesign) and then to make the manual available as a Web page and as a PDF document.

Sarah's report, above all, needs to be accurate; otherwise, the company gets fined or lowers production. Once she has processed all the information, she faces the problem of giving readers what they need: *How much explaining should I do? How will I organize the manual? Do I need visuals? And so on.*

Sarah's next project, described below, also requires research and attention to detail but takes on an even more persuasive quality. In order to resolve the matter, Sarah will seek consensus for *her* view.

Case

Being Persuasive

Millisun and other electronics producers are located on the shores of a small harbor, the port for a major fishing fleet. During the 1980s and 1990s, these companies discharged effluents containing metal compounds, PCBs, and other toxins directly into the harbor. Sarah is on a multicompany team, assigned to work with the U.S. Environmental Protection Agency, as well as state and local environmental agencies, to clean up the harbor. Much of the team's collaboration occurs via email and a shared set of documents (using the company's internal shared document system, similar to Google Docs or Microsoft OneDrive).

Enraged local citizens are demanding immediate action, angry that the process has taken so many years, and the companies themselves are anxious to end what has now become a true public relations nightmare due to the use of Twitter and several Facebook pages that citizens have set up. But the team's analysis reveals that any type of cleanup would stir up harbor sediment, possibly dispersing the solution into surrounding waters and the atmosphere. (Many of the contaminants can be airborne.) Premature action might actually increase danger, but team members disagree on the degree of risk and on how to proceed.

Sarah's communication here takes on a persuasive dimension: She and her team members first have to resolve their own disagreements and produce an environmental impact report that reflects the team's consensus. If the report recommends further study, Sarah will have to justify the delays to her bosses and the public relations office. She will have to make other people understand the dangers as well as she does.

"Can I influence people to see things my way?"

In the preceding case, the facts are neither complete nor conclusive, and views differ about what these facts mean. Sarah will have to balance the various political pressures and make a case for her interpretation. Also, as company spokesperson, Sarah will be expected to protect her company's interests. Some elements of Sarah's persuasion problem: *Are other interpretations possible? Is there a better way? Can I expect political or legal fallout?*

Case

Considering the Ethical Issues

To ensure compliance with Occupational Safety and Health Administration (OSHA) standards for worker safety, Sarah is assigned to test the air purification system in Millisun's chemical division. After finding the filters hopelessly clogged, she decides to test the air quality and

"Can I be honest and still keep my job?"

discovers dangerous levels of benzene (a potent carcinogen). She reports these findings in an email memo to the production manager, with an urgent recommendation that all employees be tested for benzene poisoning. The manager phones and tells Sarah to “have the filters replaced,” but says nothing at all about her recommendation to test for benzene poisoning. Now Sarah has to decide what to do about this lack of response: Assume the test is being handled? Raise the issue again, and risk alienating her boss? Send copies of her original email to someone else who might take action?

As the preceding case illustrates, Sarah also will have to reckon with the ethical implications of her writing, with the question of “doing the right thing.” For instance, Sarah might feel pressured to overlook, sugarcoat, or suppress facts that would be costly or embarrassing to her company.

Situations that compromise truth and fairness present the hardest choices of all: Remain silent and look the other way, or speak out and risk being fired. Some elements of Sarah’s ethics problem: *Is this fair? Who might benefit or suffer? What other consequences could this have?*

In addition to solving these various problems, Sarah has to work in a team setting: Much of her writing will be produced in collaboration with others (technical editors, other engineers, project managers, graphic artists), and her audience will extend beyond readers from her own culture.

Case

Working on a Team and Thinking Globally

Recent mergers have transformed Millisun into a multinational corporation with branches in 11 countries. Sarah can expect to collaborate with coworkers from diverse cultures on research and development and with government agencies of the host countries on safety issues, patents and licensing rights, product liability laws, and environmental concerns. Also, she can expect to confront the challenges of addressing the unique needs and expectations of people from various cultures across the globe. She will need to be careful about how she writes her daily email status reports, for example, so that these reports convey respect for cultural differences.

In order to standardize the sensitive management of the toxic, volatile, and even explosive chemicals used in film production, Millisun is developing automated procedures for quality control, troubleshooting, and emergency response to chemical leakage. Sarah has been assigned to a team that is preparing Web-based training packages and online instructional videos for all personnel involved in Millisun’s chemical management worldwide.

“Can I connect with all these different colleagues?”

As a further complication, Sarah will have to develop working relationships with people she has never met face to face, people from other cultures, and people she knows only via email and a few conference or video calls.

For Sarah Burnes, or any of us, writing is not just putting words on paper. Writing in the workplace is a process. Throughout this process, we rarely work alone but instead collaborate with others for information, help in writing, and feedback.

Projects

For all projects, check with your instructor about whether to present your findings in class, bring drafts to class for discussion, upload your project to the class learning management system (LMS), and/or use the LMS forum or discussion boards to collaborate and review each activity below.

General

1. Write a memo to your boss, justifying reimbursement for this course. Explain how the course will help you become more effective on the job. (For this and other projects below that request a memo, see Chapter 15 for memo elements and format.)
2. Locate a Web site or Facebook page for an organization that hires graduates in your major. In addition to technical knowledge, what writing and communication skills does this organization seek in job candidates? Discuss your findings in class and create a short presentation for other students, explaining what communication skills they require to find a job in this or a similar organization. If your class is using a learning management system, upload your presentation to the site and refer to it later when working on job search materials (Chapter 16).

Team

Introducing a Classmate

Class members will work together often this semester. To help everyone become acquainted, your task is to introduce to the class the person seated next to you. (That person, in turn, will introduce you.) Follow this procedure:

- a. Exchange with your neighbor whatever information you think the class needs: background, major, career plans, kinds of writing and other communication that might be done in that job, and so on. Each person gets 5 minutes to tell her or his story.
- b. Take careful notes; ask questions if you need to.
- c. Take your notes home and select only the information you think the class will find useful.
- d. Prepare a one-page document (a few paragraphs is fine) telling your classmates who this person is.
- e. Ask your neighbor to review the document for accuracy; revise as needed.
- f. In class, introduce your neighbor using your document as a guide. Turn in your document in whatever format your instructor prefers (uploaded to the learning management system; posted to a class forum or blog; sent as an email attachment; handed in on paper in class).

Digital and Social Media

With a team of 2–3 other students, visit a government Web site, such as the Food and Drug Administration, the Centers for Disease Control, or NASA. Locate documents similar in purpose to Figure 1.2 in this chapter. Analyze these documents, noting whether they conform to one of the three purposes (informative, instructional, persuasive) described in this chapter or whether they are a blend of these purposes. Next, locate the Facebook page of that government agency. How is content presented differently on each site? Does the Facebook page appear to have a different purpose from the Web site? If so, what are the differences?

Global

Look back at the Sarah Burnes case in this chapter. Assume you are about to join a team at work—a team that has members from Ireland, India, China, and the United States. Online, search for information to help you learn what you can about patterns of communication; issues to look for include politeness, turn-taking, use of first names or titles, gender roles, and formal versus informal kinds of language. Describe your findings in a short memo to your instructor. Be sure to include links to the Web sites and other online sources you found.

Chapter 2

Meeting the Needs of Specific Audiences



Ian Lishman/Juice Images/Getty images

“Audience is key. I write for people who have different levels of technical expertise, including service technicians, managers, engineers, and customers. I also work with the marketing team on proposals for commercial clients and with the legal department to write regulatory documents. It’s important for me to understand how much background information and technical explanations are required for a particular set of readers. In terms of the document’s design and overall size, I need to consider the primary way people will interact with the material: on paper, on a computer, or on a phone.”

—John Bryant, *Technical Communication Project Lead*

Analyze Your Document's Audience and Purpose
Assess the Audience's Technical Background
Anticipate Your Audience's Preferences

Guidelines for Analyzing Your Audience and Its Use of the Document
Develop an Audience and Use Profile

Checklist: Analyzing Audience and Purpose Projects



Learning Objectives

- 2.1** Ask the right questions to analyze your audience and purpose

2.2 Assess your audience's technical background
- 2.3** Identify the appropriate document qualities for your audience

2.4 Develop an audience and use profile to guide your work

All technical communication is intended for people who will use and react to the information. These people are considered to be the *audience* for your document: people who are reading the material in order to do something or learn something.

Definition of audience

Before you start writing, you need to identify with as much precision as possible who will be reading the document and then understand how that particular audience will use your material. For example, you might need to *define* something—as in explaining to insurance clients what the term “variable annuity” means. You might need to *describe* something—as in showing an architectural client what a new office building will look like. You might need to *explain* something—as in instructing an auto repair technician how to reprogram the car’s electronic ignition. Or you might need to *propose* something—as in arguing for change in your company’s sick-leave policy. Preparing an effective document requires systematic analysis of your audience and the ways in which they will use your document (Figure 2.1).

Why understanding your audience is important

Because people’s basic requirements vary, every audience expects a message tailored to its own specific interests, social conventions, ways of understanding problems, and information needs.

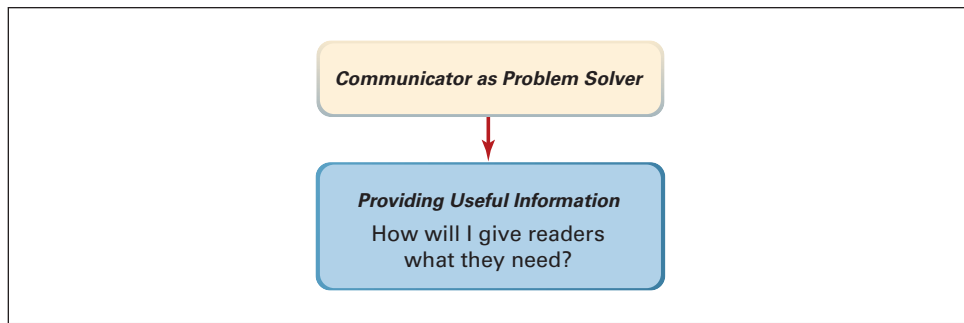


Figure 2.1 Communicators Begin by Considering Their Audience

Analyze Your Document's Audience and Purpose

2.1 Ask the right questions to analyze your audience and purpose

Explore all you can about who will use your document, why they will use it, and how they will use it. Begin by analyzing your audience and the background, needs, and preferences of these readers. Among the questions you must answer are these:

Questions for
analyzing a
document's
audience

- Who is the main audience for this document?
- Who else is likely to read it?
- What is your relationship with the audience?
- Are multiple types of relationships involved?
- What information does this audience need?
- How familiar might the audience be with technical details?
- Do these readers have varying levels of expertise?
- What culture or cultures does your audience represent?
- How might cultural differences shape readers' expectations and interpretations?
- How will people interact with the material: in digital formats, on paper, or both?

Answer these questions by considering the suggestions that follow.

Primary and Secondary Audiences

"Who is the main audience for this document?"

When writing a technical document, keep two audiences in mind. Most documents are geared to an immediate audience of readers. This is your primary audience. For instance, a set of instructions for installing and using a new software application for an office network might be directed primarily toward the information technology support staff who would be doing the installing.

But most documents also have a secondary audience, those individuals outside the immediate circle of people who will be needing the information directly. For example, a secondary audience for these instructions might be managers, who will check to see if the instructions comply with company policy, or lawyers, who will make sure the instructions meet legal standards.

Generally, primary readers are people who will be the main users of the document (often they are also the people who requested the document). Secondary readers are those who will support the project, who will advise any decision makers, or who will be affected by this document in some other way.

“Who else is likely to read it?”

Your Relationship to Your Readers

Besides identifying your audience in a general way, you also need to understand your relationship with everyone involved. In your situation, will the readers be superiors, colleagues, or subordinates? Your answer will help you determine the level of formality and authority to use in the document. Are the readers from inside or outside your organization? Answering this question will help you decide how confidential you need to be. Do you know the readers personally? If so, perhaps you can adopt a slightly more informal (but still professional) tone. Are they likely to welcome or to resist your information? Knowing the answer will help you decide how persuasive you need to be. Are they a combination of people from various levels, both inside and outside the company? The answer will help you tailor your document for various readers.

“What is my relationship with this audience?”

Purpose of Your Document

Spell out precisely what you want your document to accomplish and how you expect readers to use it. In other words, determine your purpose. Ask these questions:

- What is the main purpose of the document?
- What other purpose or purposes does the document serve?
- What will readers do with this information?

Questions for deciding on the purpose of your document

Answer these questions by considering the suggestions in the sections that follow.

Primary and Secondary Purposes

Most forms of technical communication fulfill a specific primary purpose. As discussed in Chapter 1, the primary purpose (to inform, to instruct, or to persuade) will affect the document’s overall shape and substance.

Many documents have one or more secondary purposes. For example, the primary purpose in a typical instruction manual is to instruct, that is, to teach an audience how to assemble or use the product. But for ethical and legal reasons, companies also want people to use the product safely. A user manual for a power tool or a lawnmower, for instance, almost always begins with a page that spells out safety hazards and precautions before instructing readers about how to proceed with the mechanism.

“What is the main purpose of this document?”

“What other purposes does this document serve?”

Write a clear audience and purpose statement

In planning your document, work from a clear statement that identifies the target audience as well as the document's primary and secondary purposes. For example, "The purpose of my document is *to inform* company employees of the new absentee policy and *to instruct* them on how to follow the procedures properly," or "The purpose of my document is *to inform* my division's programmers about the new antivirus software, as well as *to instruct* them on how to install the software and *to persuade* them of the importance of running weekly virus scans."

Intended Use of the Document

"How will readers use this document?"

In addition to determining purposes of a document from your own perspective, also consider how and why it will be used by others. As you plan your document, answer these questions:

Questions for anticipating how your document will be used

- Do my readers simply want to learn facts or understand concepts? Will they use my information in making some type of decision?
- Will people act immediately on the information?
- Do they need step-by-step instructions?
- In my audience's view, what is most important about this document?

Besides answering these questions, try asking members of your audience directly, so you can verify what they want to know.

Assess the Audience's Technical Background

2.2 Assess your audience's technical background

"How much expertise does this audience possess?"

When you write for a close acquaintance (coworker, engineering colleague, chemistry professor who reads your lab reports, or supervisor), you adapt your report to that person's knowledge, interests, and needs. But some audiences are larger and less defined (say, for a journal article, a user manual, a set of first-aid procedures, or an accident report). When you have only a general notion about your audience's background, decide whether your document should be *highly technical*, *semitechnical*, or *nontechnical*, as depicted in Figure 2.2.

Highly Technical Audience

"Does my audience understand highly technical information?"

Readers at a specialized level expect to be presented the facts and figures they need—without long explanations. In Figure 2.3, an emergency room physician reports to the patient's doctor, who needs an exact record of symptoms, treatment, and results. In this situation, a highly technical version is both appropriate and important.

For her expert colleague, this physician doesn't need to define the technical terms (*pulmonary edema*, *sinus rhythm*). Nor does she need to interpret lab findings

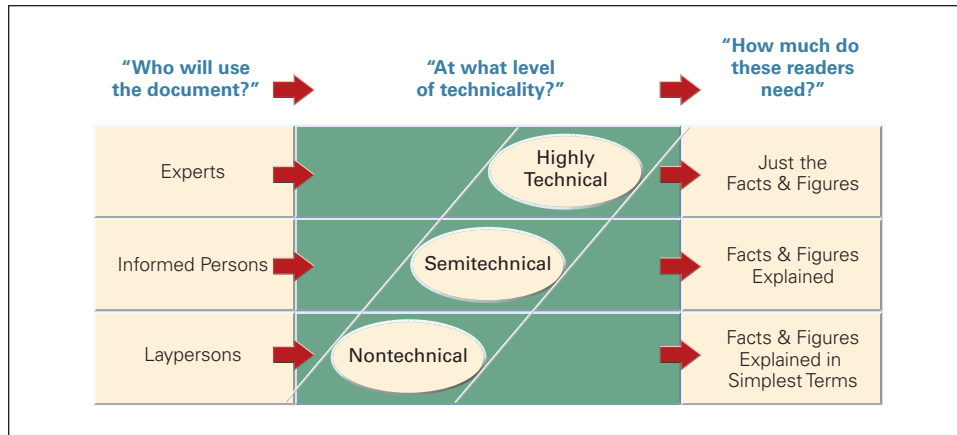


Figure 2.2 Deciding on a Document's Level of Technicality

The patient was brought to the ER by ambulance at 1:00 A.M., September 27, 2010. The patient complained of severe chest pains, dyspnea, and vertigo. Auscultation and EKG revealed a massive cardiac infarction and pulmonary edema marked by pronounced cyanosis. Vital signs: blood pressure, 80/40; pulse, 140/min; respiration, 35/min. Lab: wbc, 20,000; elevated serum transaminase; urea nitrogen, 60 mg%. Urinalysis showed 4+ protein and 4+ granular casts/field, indicating acute renal failure secondary to the hypotension.

The patient received 10 mg of morphine stat, subcutaneously, followed by nasal oxygen and 5% D & W intravenously. At 1:25 A.M. the cardiac monitor recorded an irregular sinus rhythm, indicating left ventricular fibrillation. The patient was defibrillated stat and given a 50 mg bolus of Xylocaine intravenously. A Xylocaine drip was started, and sodium bicarbonate administered until a normal heartbeat was established. By 3:00 A.M., the oscilloscope was recording a normal sinus rhythm.

As the heartbeat stabilized and cyanosis diminished, the patient received 5 cc of Heparin intravenously, to be repeated every six hours. By 5:00 A.M. the BUN had fallen to 20 mg% and vital signs had stabilized: blood pressure, 110/60; pulse, 105/min; respiration, 22/min. The patient was now conscious and responsive.

←

Expert readers need facts and figures, which they can interpret for themselves

Figure 2.3 A Technical Version of an Emergency Treatment Report This version is written for medical experts.

(4+ protein, elevated serum transaminase). She uses abbreviations that her colleague clearly understands (*wbc*, *BUN*, 5% *D & W*). Because her colleague knows all about specific treatments and medications (*defibrillation*, *Xylocaine drip*), she does not explain their scientific bases. Her report answers concisely the main questions she can anticipate from this particular reader: What was the problem? What was the treatment? What were the results?

Semitechnical Audience

“Does my audience know a little but need further guidance?”

In certain cases, readers will have some technical background but not as much as the experts. For instance, first-year medical students have specialized knowledge, but they know less than the advanced students. Yet all medical students could be considered semitechnical. Therefore, when you write for a semitechnical audience, identify the *lowest* level of understanding in the group, and write to that level. Too much explanation is better than too little.

The partial version of the medical report in Figure 2.4 might appear in a textbook for medical or nursing students, in a report for a medical social worker, or in a monthly report for the hospital administration.

Informed but nonexpert readers need enough explanation to understand what the data mean

Examination by stethoscope and electrocardiogram revealed a massive failure of the heart muscle along with fluid buildup in the lungs, which produced a cyanotic discoloration of the lips and fingertips from lack of oxygen.

The patient's blood pressure at 80 mm Hg (systolic)/40 mm Hg (diastolic) was dangerously below its normal measure of 130/70. A pulse rate of 140/minute was almost twice the normal rate of 60–80. Respiration at 35/minute was more than twice the normal rate of 12–16.

Laboratory blood tests yielded a white blood cell count of 20,000/cu mm (normal value: 5,000–10,000), indicating a severe inflammatory response by the heart muscle. The elevated serum transaminase enzymes (produced in quantity only when the heart muscle fails) confirmed the earlier diagnosis. A blood urea nitrogen level of 60 mg% (normal value: 12–16 mg%) indicated that the kidneys had ceased to filter out metabolic waste products. The 4+ protein and casts reported from the urinalysis (normal value: 0) revealed that the kidney tubules were degenerating as a result of the lowered blood pressure.

The patient immediately received morphine to ease the chest pain, followed by oxygen to relieve strain on the cardiopulmonary system, and an intravenous solution of dextrose and water to prevent shock.

Figure 2.4 A Semitechnical Version of an Emergency Treatment Report This version is written for readers who are not experts but who have some medical background.

This semitechnical version explains the raw data (highlighted in yellow). Exact dosages are omitted because no one in this audience actually will be treating this patient. Normal values of lab tests and vital signs, however, help readers interpret the report results. (Experts know the normal values.) Knowing what medications the patient received would be especially important in answering this audience's central question: How is a typical heart attack treated?

Nontechnical Audience

People with no specialized training (laypersons) look for the big picture instead of complex details. These readers expect technical data to be translated into words that most people will understand. Laypersons are impatient with abstract theories, but they want enough background to help them make the right decision or take the right action. They are bored or confused by excessive detail but frustrated by raw facts left unexplained or uninterpreted. They expect to understand the document after reading it only once.

The nontechnical version of the medical report shown in Figure 2.5 might be written for the patient's spouse or other family member, or as part of a script for an online documentary video about emergency-room treatment. Nearly all interpretation (highlighted in yellow), this version mentions no specific medications, lab tests, or normal values. It merely summarizes events and briefly explains what they mean and why these particular treatments were given.

“Does my audience have little or no technical background?”

Heart sounds and electrical impulses were both abnormal, indicating a massive heart attack caused by failure of a large part of the heart muscle. The lungs were swollen with fluid and the lips and fingertips showed a bluish discoloration from lack of oxygen.

Blood pressure was dangerously low, creating the risk of shock. Pulse and respiration were almost twice the normal rate, indicating that the heart and lungs were being overworked in keeping oxygenated blood circulating freely.

Blood tests confirmed the heart attack diagnosis and indicated that waste products usually filtered out by the kidneys were building up in the bloodstream. Urine tests showed that the kidneys were failing as a result of the lowered blood pressure.

The patient was given medication to ease the chest pain, oxygen to ease the strain on the heart and lungs, and intravenous solution to prevent the blood vessels from collapsing and causing irreversible shock.

← Laypersons need everything translated into terms they understand

Figure 2.5 A Nontechnical Version of an Emergency Treatment Report This version is written for readers who have no medical background.

In a different situation, however (say, a malpractice trial), the layperson jury would require detailed technical information about medication and treatment. Such a report would naturally be much longer—basically a short course in emergency coronary treatment.

Audiences with Varying Technical Backgrounds

The technical background of large and diverse audiences can be variable and hard to pin down. When you must write for audiences at different levels, follow these suggestions:

How to tailor a document to address different technical backgrounds

- If the document is short (a letter, memo, email, or anything less than two pages), rewrite it at different levels for different backgrounds.
- If the document exceeds two pages, address the primary readers. Then provide appendices, glossaries, hyperlinks, or other easily accessible information for secondary readers. Transmittal letters and informative abstracts can also help nonexperts understand a highly technical report. (See Chapter 21 for use and preparation of appendices and other supplements.)

For an illustration of these differences, consider the following case.

Different readers have differing information needs

“What do these findings mean?”

“How did you arrive at these conclusions?”

Case

Tailoring a Single Document for Multiple Audiences

You are a metallurgical engineer in an automotive consulting firm. Your supervisor has asked you to test the fractured rear axle of a 2016 Delphi pickup truck recently involved in a fatal accident. Your assignment is to determine whether the fractured axle *caused* or *resulted from* the accident.

After testing the hardness and chemical composition of the metal and examining microscopic photographs of the fractured surfaces (fractographs), you conclude that the fracture resulted from stress that developed *during* the accident. Now you must report your procedure and your findings to a variety of readers.

Because your report may serve as courtroom evidence, you must explain your findings in meticulous detail. But your primary readers (the decision makers) will be nonspecialists (the attorneys who have requested the report, insurance representatives, possibly a judge and a jury), so you must translate your report, explaining the principles behind the various tests, defining specialized terms such as “chevron marks,” “shrinkage cavities,” and “dimpled core,” and showing the significance of these features as evidence.

Secondary readers will include your supervisor and outside consulting engineers who will be evaluating your test procedures and assessing the validity of your findings. Consultants will be focusing on various parts of your report, to verify that your procedure has been exact and faultless. For this group, you will have to include appendices spelling out the technical details of your analysis: *how* hardness testing of the axle’s case and core indicated that the axle had been properly carburized; *how* chemical analysis ruled out the possibility that the manufacturer had used inferior alloys; *how* light-microscopic fractographs revealed that the origin of the fracture, its direction of propagation, and the point of final rupture indicated a ductile fast fracture, not one caused by torsional fatigue.

In the previous scenario, primary readers need to know *what your findings mean*, whereas secondary readers need to know *how you arrived at your conclusions*. Unless it serves the needs of each group independently, your information will be worthless.

Digital Documents for Multiple Audiences

A great way to address different technical levels of audience is with digital documents, including Web pages, blogs and wikis, PDFs, shared drive documents (such as Google drive), and others. These forms are ideal for providing information for readers from a wide range of backgrounds because you can use hyperlinks, tabs, and other interactive features to direct different audiences to information written and designed to match their interests and backgrounds. The Web site in Figure 2.6 uses tabs and links to accommodate different levels of interest and expertise.

Advantages of digital documents for multiple audiences

Any document can easily reach across the globe, and digital documents are also useful when readers are from different countries or cultures. The instruction guide you write for a new camera card reader, for example, may well end up on a Web site, where it will be used by customers worldwide. Some international readers may be offended by commands in strongly worded imperative forms, such as “STOP: Do not insert the storage card until you reach Step 3.” Or they may be baffled by icons and other visuals that have no meaning in their culture. But with Web-based documents, readers can click on a link to choose from different countries and cultures and will then receive information that is properly translated and localized (adapted) for them.

Advantages of digital documents for global audiences

For more on this topic, see the “Technical Communication Reaches a Global Audience” section in Chapter 1 as well as Chapter 5.

Anticipate Your Audience’s Preferences

2.3 Identify the appropriate document qualities for your audience

Readers approach any document with certain preferences: its desired length and details, the format and medium in which it should be presented, and the appropriate tone, as well as deadline and budget expectations.

Length and Details

The length and amount of detail in your document depends on what you can learn about your audience’s needs. Were you asked to “keep it short” or to “be comprehensive”? Are people more interested in conclusions and recommendations, or do they want everything spelled out?

Give readers only what they need and want

Format and Medium

Does your audience expect a letter, a memo, an email, a short report, or a long, formal report with supplements (title page, table of contents, appendixes, and so on—see Chapter 21, “Front Matter and End Matter Supplements”)? Can visuals and page

Decide how your document will look and will be distributed

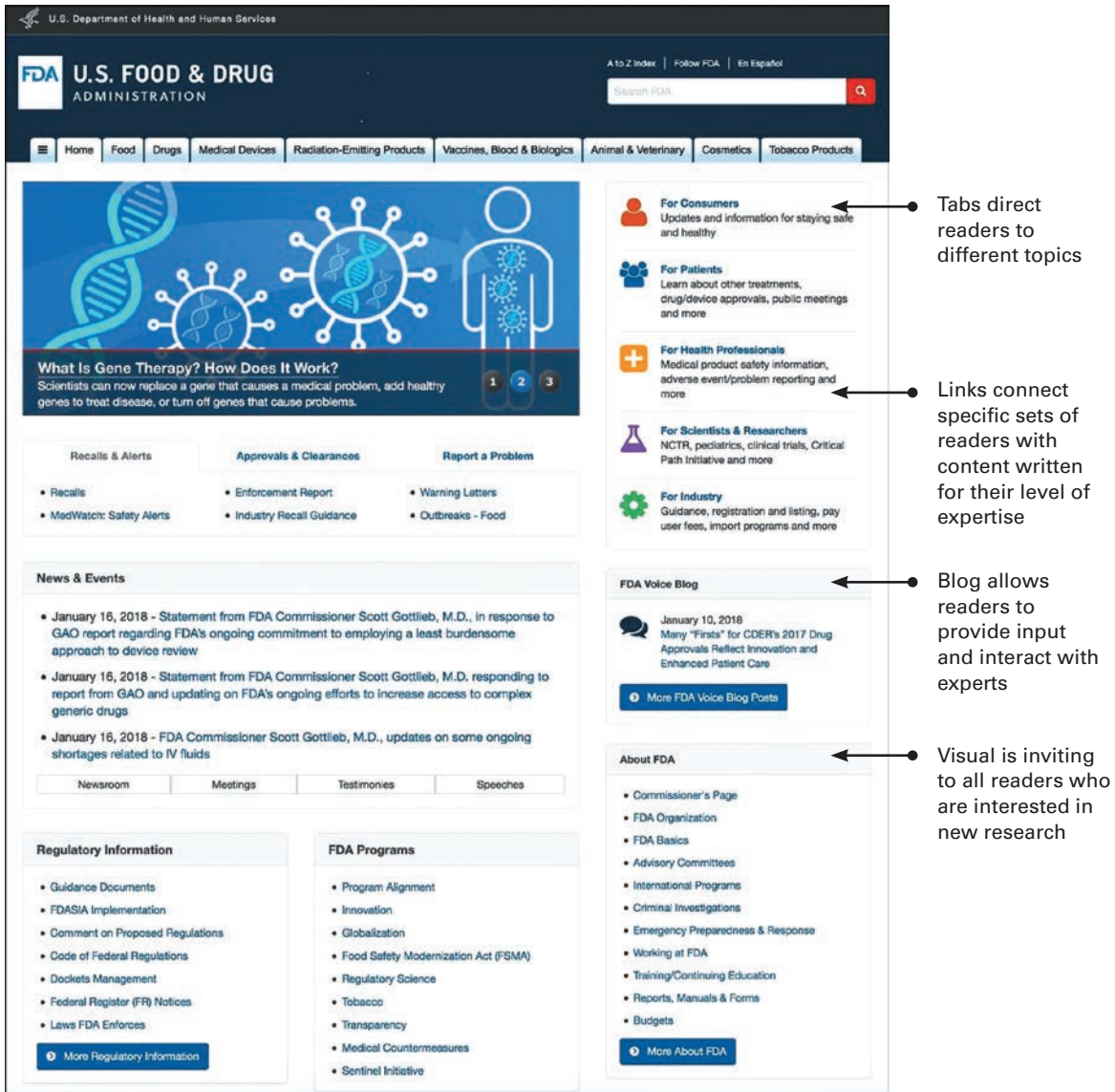


Figure 2.6 A Web Page Designed for Multiple Audiences This page uses links and tabs to provide information for people from a range of backgrounds, including consumers, patients, health professionals, and scientists. A blog allows readers to share their views. The site is available in both English and Spanish.

Source: U.S. Food and Drug Administration.

layout (charts, graphs, drawings, headings, lists) make the material more accessible? Should the document be available as a PDF, as a Web site with links, in hard copy, as a social media post, or in some combination of the above?

Tone

The tone of your writing conveys an image of who you are: your *persona*—the image that comes through between the lines. Tone can range from formal (as in a business letter to a client) to semiformal (as in a memo announcing a change in company dress policy) to informal (as in a quick email to colleagues announcing the upcoming company picnic). Workplace readers expect a tone that reflects both the importance or urgency of the topic and the relationship between writer and reader. For example, the letter to a client that begins with “We are pleased to forward your annual investment statement” is probably appropriate. But a similar tone used in the memo about the company picnic would seem stuffy and pretentious (“I am pleased to announce...”).

Decide on the appropriate tone for your situation

At the same time, the tone of your writing can range from friendly and encouraging to distant and hostile. For example, a bossy tone in a memo to your employees (“It would behoove you to...”) would make them feel demeaned and resentful. In short, your tone is effective when you sound like a likable person talking to people in a workplace setting. The notion of *workplace setting* is key here: Always avoid the kind of unprofessional free-for-all tone that is common in tweets, text messages, and emails among casual friends outside of work.

Due Date and Timing

Does your document have a deadline? Workplace documents almost always do. Is there a best time to submit it? Do you need to break down the deadline into a schedule of milestones? Will any of your information become outdated if you wait too long to complete the document?

Know when to submit the document

Budget

Does your document have a production budget? If so, how much? Where can you save money? How much time can your company afford to allot you for creating the document? How much money can you spend obtaining permission to use materials from other sources? How much can you spend on Web design, page layout, and, if in hard copy, on printing, binding, and distributing your document?

Calculate the financial costs

NOTE Although a detailed analysis can tell you a great deal, rarely is it possible to pin down an audience with certainty, especially if your audience is large and diverse. Before you circulate or submit a final document, ask selected readers for feedback. For task-oriented documents, such as instructions or procedures, you can also conduct a usability test (see Chapter 19).

Guidelines

for Analyzing Your Audience and Its Use of the Document

- **Picture exactly what these readers need and how they expect to use your document.** Whether it's the company president or the person next to you in class, that person has specific concerns and information needs. Your readers may need to complete a task, solve a problem, make a decision, evaluate your performance, or take a stand on an issue. Think carefully about exactly what you want your readers to be able to do.
- **Learn all you can about who will use your document.** Are your primary readers superiors, colleagues, or subordinates? Are they inside or outside your organization? Who else might be interested or affected? What do readers already know about this topic? How much do they care? Are they likely to welcome or reject your information?
- **In planning your document, work from a clear statement of audience and purpose.** For example, "The purpose of my document is to [describe using verbs: persuade, instruct, inform] the target audience [identify precisely: colleagues, superiors, clients]."
- **Consider your audience's technical background.** Colleagues who speak your technical language will understand raw data. Managers who have limited technical knowledge expect interpretations and explanations. Clients with little or no technical background want to know what this information means to them, personally (to their health, pocketbook, safety). However, none of these generalizations might apply to your situation. When in doubt, aim for low technicality.
- **When you don't know exactly who will be reading your document, picture the "general reader."** A nontechnical audience will expect complex information to be explained in ways that have meaning for them, personally, and insofar as possible in everyday language. (For example, refer to "heart and lungs" instead of "cardiopulmonary system." Instead of "A diesel engine generates 10 BTUs per gallon of fuel compared with 8 BTUs generated by a conventional gasoline engine," write "A diesel engine yields 25 percent better gas mileage than its gas-burning counterpart.")
- **Consider readers' cultural backgrounds.** Identify as closely as possible your audience's specific customs and values. How might cultural differences play a role in readers' interpretation of your presentation?
- **Anticipate your audience's reactions.** If the topic is controversial or the news is bad, will some people resist your message? Will some feel threatened or offended? Should you be bold and outspoken or tread lightly? No matter how accurate your information or how sensible your ideas, an alienated audience will reject them out of hand.
- **Anticipate your audience's questions.** Based on their needs and concerns, readers have questions such as these: What is the purpose of this document? Why should I read it? What happened, and why? Who was involved? How do I perform this task? How did you perform it? What action should be taken, and why? How much will it cost? What are the risks? Give readers what they need to know, instead of what they already know. Give them enough material to understand your position and to react appropriately.
- **Anticipate your audience's preferences.** Try to pinpoint the length, detail, format, medium, tone, timing, and budget preferred by this audience. As the situation allows, adjust your document accordingly.

Develop an Audience and Use Profile

2.4 Develop an audience and use profile to guide your work

In order to focus sharply on your audience, purpose, and the many factors discussed in this chapter, develop your own version of the Audience and Use Profile Sheet shown in Figure 2.7 for any document you prepare. Modify this sheet as needed to suit your own situation, as shown in the following case.