

Approaches to technical writing

Elements 1: History, Finding a
Niche, Philosophy, Integrating
Technical Writing with Liberal Arts

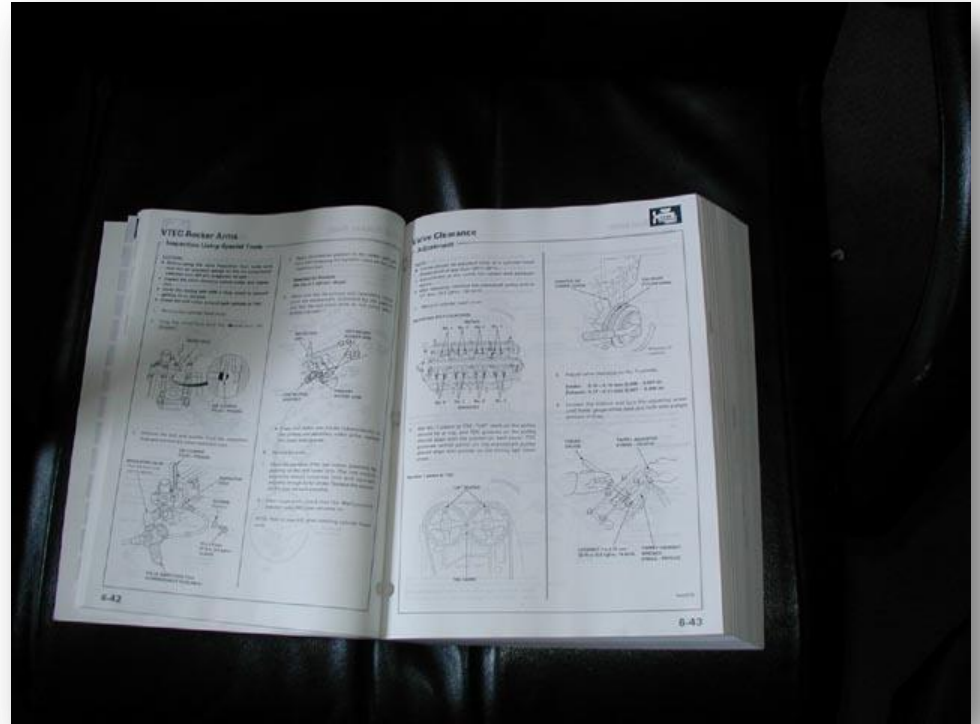
Andrew Rusnak



How much technical writing ?

- **Faigley and Miller found [way back] in 1982 that people in professional and technical occupations spend the most time, about 29 percent of the work week, writing. [You can bet it's almost twice as much now.]**

—Russell Rutter's 1991 essay, "History, Rhetoric, and Humanism"



Approaches to technical writing

How much technical writing ?

The National Commission on Writing

For America's Families
Schools and Colleges

- ☐ Writing is a “threshold skill” for both employment and promotion, particularly for salaried employees;
- ☐ People who cannot write and communicate clearly will not be hired and are unlikely to last long enough to be considered for promotion;

Survey mailed in 2004 to 120 HR Directors in corporations associated with the Business Roundtable, CEOs of leading U.S. corporations, yielded a 53.3 percent response rate

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- ❑ Two-thirds of salaried employees in large American companies have some writing responsibility. "All employees must have writing ability ...Manufacturing documentation, operating procedures, reporting problems, lab safety, waste-disposal operations—all have to be crystal clear," said one human resource exec.;

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- ❑ Eighty percent or more of the companies in the service and finance, insurance, and real estate sectors, the corporations with the greatest employment growth potential, assess writing during hiring;
- ❑ A similar dynamic is at work during promotions. Half of all companies take writing into account when making promotion decisions;

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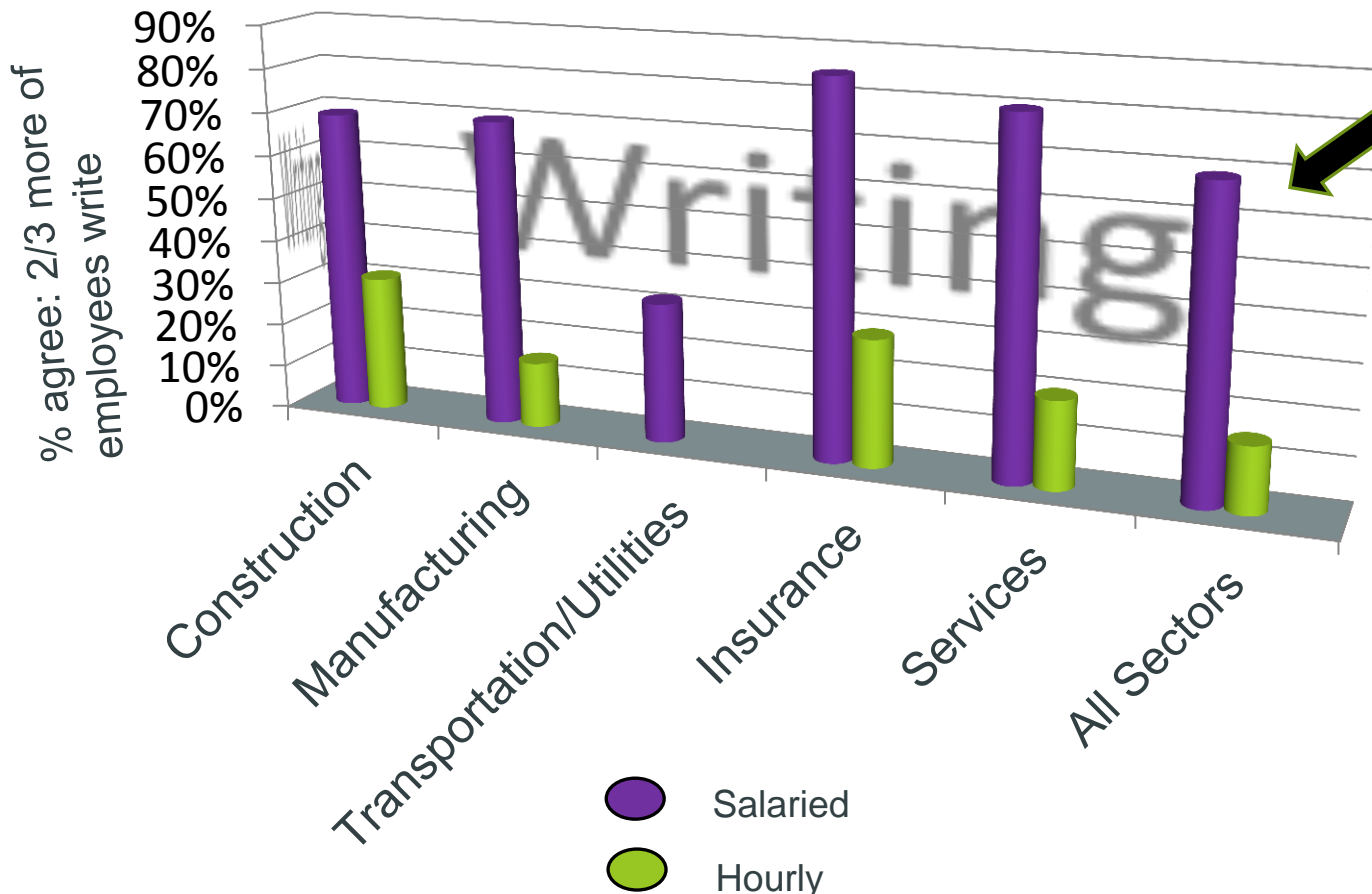
- ❑ More than half of all responding companies report that they “frequently” or “almost always” produce technical reports (59 percent), formal reports (62 percent), and memos and correspondence (70 percent). Communication via email and PowerPoint presentations is universal; and
- ❑ More than 40 percent of responding firms offer or require training for salaried employees with writing deficiencies.

How much technical writing ?

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For America's Families
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Most professional
employees are
expected to write

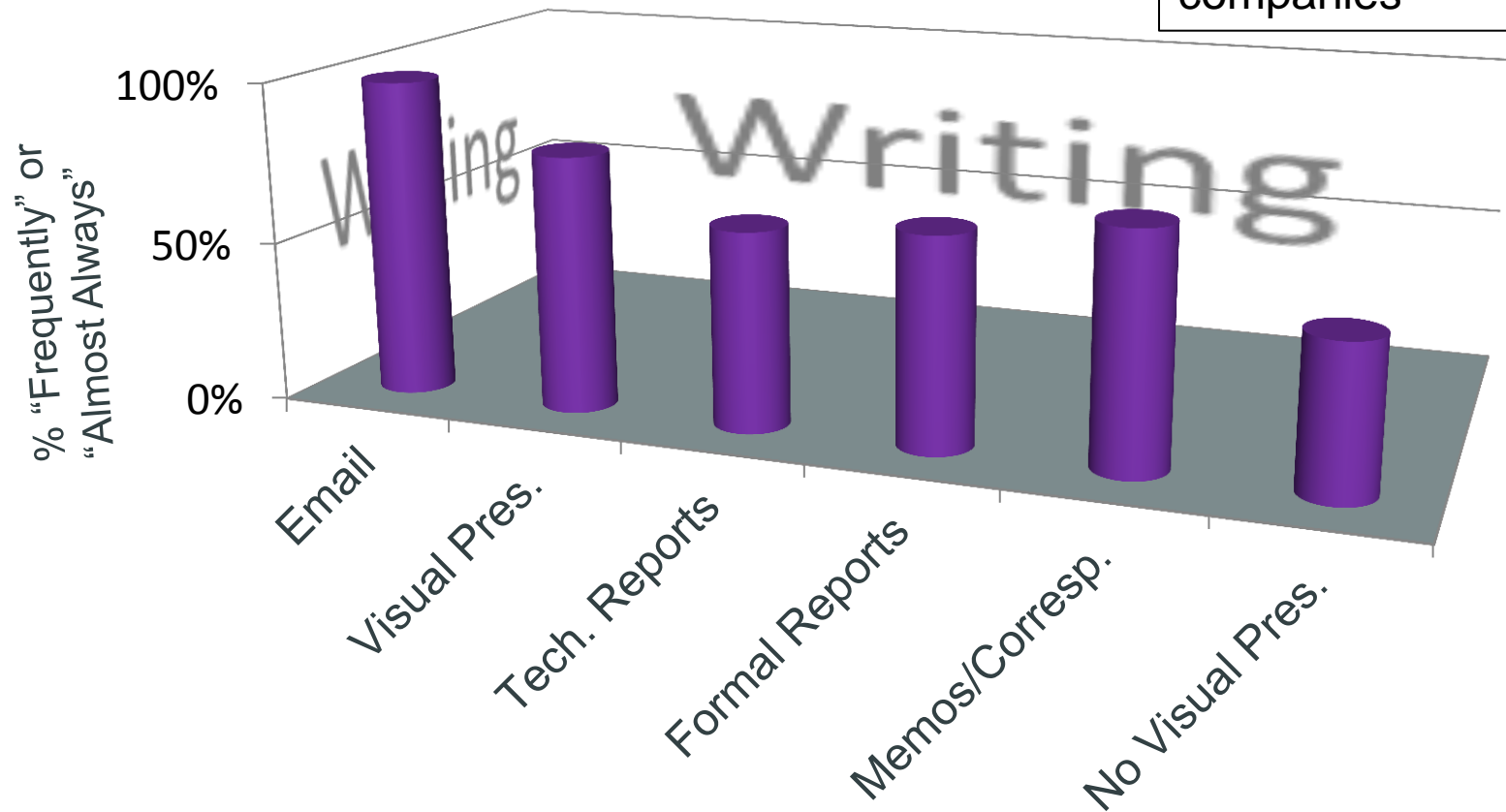


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The National Commission on Writing

For America's Families
Schools and Colleges

Common forms of
writing in most
companies



How much technical writing ?

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For America's Families
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Despite the apparent optimism in the conclusion of The National Commission on Writing 2004 report, that “By a substantial majority, respondents report that two-thirds or more of their employees (current and new) meet company writing requirements,” (even if “a significant proportion of responding firms (about one-third) report that one-third or fewer of their employees both current and new possess the writing skills companies value”), more recent anecdotal evidence is beginning to paint a different picture, especially in the fields of science and technology.

Approaches to technical writing

How much technical writing ?

There is a direct correlation between your ability to “language,” your ability to read and interpret text of all manifestations, your ability to write, your ability to communicate



orally, to present, and your ability to be successful in your chosen profession. The more you know about how your own mind works and how to develop and refine your language skills in the workplace, the more successful you will be. Good writers and communicators in the work environment are “go to” leaders.

How much technical writing ?

From a recent *U.S. News and World Report* article:

"With this year's application cycle in full swing, aspiring premeds across the country will be aiming to submit their applications early. While many parts of the AMCAS and other application systems) involve data entry and other finite tasks, the personal statement is often the least predictable part for students—and the one most likely to derail many submission timelines."



Approaches to technical writing

How much technical writing ?

From a recent *U.S. News and World Report* article:

Why is the personal statement so challenging?

‘First, many students, particularly premeds, may not have enough writing experience under their belt from science-heavy undergraduate curricula. Second, a substantial number may not realize how much reflection and introspection it requires to prepare, edit, and polish a strong essay.”



Approaches to technical writing

“Listen. Write. Present” Offers Communication Tips for Science Professionals



Press release, Jan. 20, 2012 <http://www.marketwatch.com/story/listen-write-present-offers-communication-tips-for-science-professionals-2012-01-20>

RALEIGH, NC, Jan 20, 2012
(MARKETWIRE via COMTEX) –

"Check any online job-hunting Web site for science, technical, pharmaceutical, biotech and medical jobs and you'll find one common requirement: 'excellent communication skills,'" write Stephanie Roberson Barnard and Deborah St. James in their new book, "Listen. Write. Present -- The Elements for Communicating Science and Technology" (Yale University Press; 2012), www.ListenWritePresent.com .

“Listen. Write. Present” Offers Communication Tips for Science Professionals

“Unfortunately, the science-rich education required for health-care professionals leaves little room for learning how to craft a message for a particular audience. And that's essential not only for getting jobs, but for keeping them and winning promotions, says Barnard, a communications consultant who specializes in training medical professionals to speak and write clearly and effectively. “

Press release, Jan. 20, 2012



Brief History of modern tech writing over the past 60 years (courtesy of ProEdit):

- **1949:** Joseph D. Chapline wrote a user's manual for the BINAC computer. He became the first technical writer of computer documentation;
- **1951:** An ad for a technical writer was first published in the "Help Wanted" ads;
- **1952:** Joseph D. Chapline documented the UNIVAC computer, using examples to document its functions;
- **1960:** The continued growth of technology, particularly in the electronics, aeronautics, and space industries, created a big upsurge in demand for technical writers;

Brief History of modern tech writing over the past 60 years (courtesy of ProEdit):

- **1964:** Marshall McLuhan published *Understanding Media*, proclaiming that electronic communication media will soon turn the world into a "global village."
- **1965:** Ted Nelson coined the terms "hypertext" and "hypermedia" to describe a model of non-sequential writing and accessing information, stressing the connections among ideas.
- **1975:** The U.S. Government required all product warranties to be stated clearly and unambiguously.
- **1976:** The Modern Language Association (MLA) approved a panel on technical writing at its annual conference.

Brief History of modern tech writing over the past 60 years (courtesy of ProEdit):

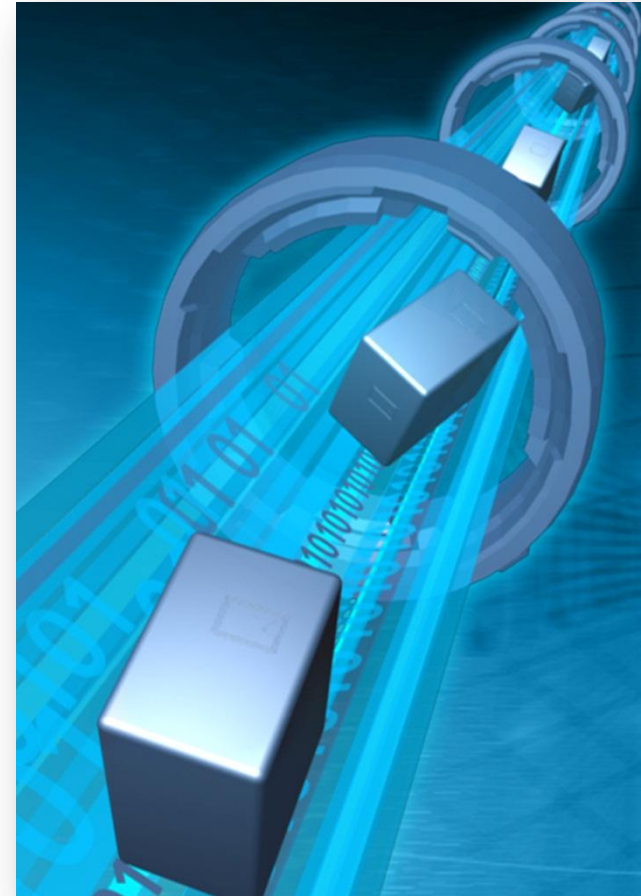
- **1980:** In an immigration case involving the question of the occupation classification of a technical publications writer, the U.S. Department of Justice ruled that technical writing is a profession.
- **1986:** The American National Standards Institute (ANSI) released the Standard Generalized Markup Language (SGML), which became the basis of several subset markup languages, including HTML.
- **1987:** Early desktop publishing and page layout software began appearing on writers' desktops, including products like Ventura Publisher, Interleaf, FrameMaker, and Aldus PageMaker.

Brief History of modern tech writing over the past 60 years (courtesy of ProEdit):

- **1991:** ISO 9000 certification requirements created new job opportunities for technical writers.
- **1999:** Writers began using XML, an "eXtensible Markup Language" that is evolving from HTML.
- **2002:** The Sarbanes-Oxley Act of creates new opportunities for technical writers documenting policies, procedures, and internal controls.

Brief History of modern tech writing over the past 60 years (courtesy of ProEdit):

- So what does the future hold? In the short term, more and more information is moving to the Web. This offers countless opportunities for a technical writer to design and develop future generations of online help systems. In the longer term, the Web will become the greatest technical writing library imaginable.



Types of technical writing jobs:

- **Business** – Explain rules, regulations, policies, procedures, business plans, marketing overlap – annual reports;
- **Science** – Explains theories, hypotheses, research, experimentation. Could be scientists, journalist, media/public relations;
- **Medical** – Software and hardware applications, policies, procedures, medical documentation, science overlap;

Types of technical writing jobs:

- **Computer** – Gaming, any software/hardware application, installation, usage, ranges from private sector to military;
- **Engineering** – Mechanical, civil, electrical, chemical, aerospace, tooling (widespread needs);
- **Legal** – Legal documentation, contracts, trademarks, copyrights, etc ...

Technical & Science Writing	Function	Final Products	Audiences
Technical Communicator/Writer	Acts as interface between subject-matter experts, which include designers and engineers, and end users/customers. Reduces technical language for user comprehension. This includes professional job titles that don't include "writer," e.g. nurse, technician, paralegal, technician.	User documentation, design specifications, installation manuals, hardware & software manuals, technical proposals, reports, presentations.	Various user groups ranging from mainstream to B-to-B customers, government personnel, contractors, sub-contractors.
Science Writers	Via research, acquires specific and detailed academic subject-matter expertise in physical or social sciences and publishes results in peer-reviewed journals.	Well researched, peer-reviewed reports for publication in peer-reviewed journals, print and/or online versions.	Peers who practice same academic discipline.
Technical & Science Journalists	Writers and journalists who interpret the latest scientific and technical research, prepare easily digestible content for mainstream consumption in print and/or online versions.	Mainstream print or online news items, short and long features, blogs.	Mainstream, general audiences.
Technical & Science Public and/or Media Relations Managers/Directors	To work as a spokesperson for a private company, government agency, non-profit, or public institution that produces, researches, or represents technical or scientific subject matter.	Reports, articles, press releases, presentations.	News outlets, mainstream public, local communities, government representatives and interests, new customers.

How does one become a technical writer?

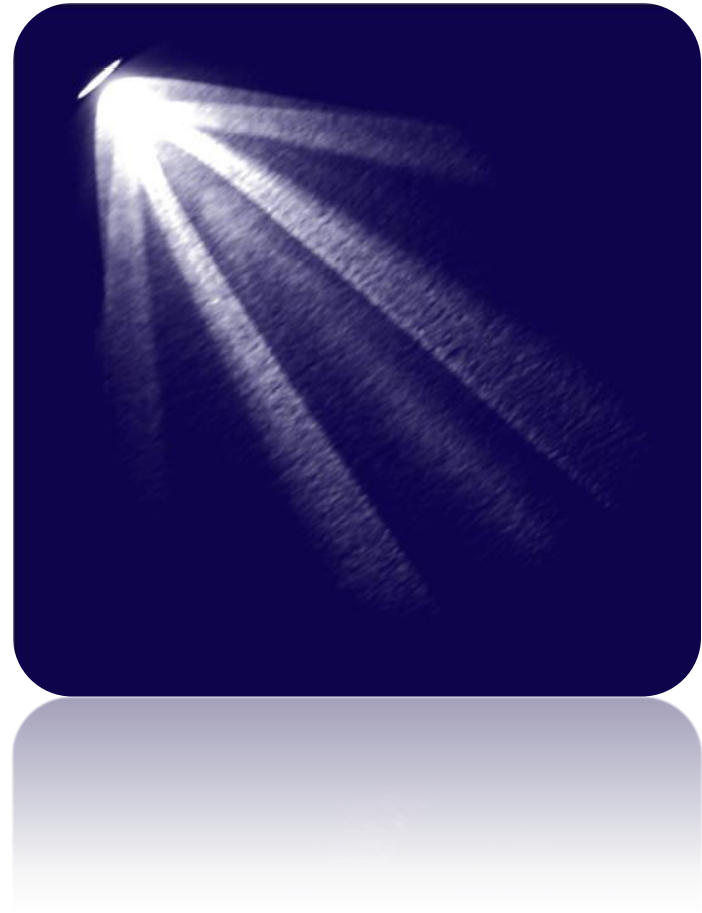
- An ability to develop and hone “reality-directed imaginative thinking”;
- Good writing skills;
- Subject matter expertise;
- Timing/fortuity;
- Fortitude/perseverance.



Approaches to technical writing

How does one become a technical writer?

“The goal is to transform data into information and information into insight.”



–Carly Fiorina

To be a good STEM writer: Understand ...

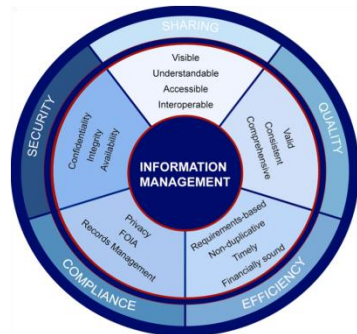
Saraswati,
the Hindu
Goddess of
Wisdom,
Music, and
Dance



Wisdom
Infers Experience



Knowledge
Infers Application



Information
Infers Context



Data

It is critical that good technical writers also are good creative thinkers.

Combining creativity and technology



Approaches to technical writing

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

“In order to be a good poet,
one also must be a good
engineer and in order to
be a good engineer, one
also must be a good
poet.”

—unknown



Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

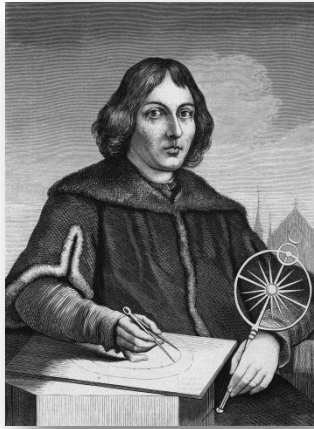
The term ***liberal arts*** denotes a curriculum that imparts *general* knowledge and develops the student's rational thought and intellectual capabilities, unlike the professional, vocational, and technical curricula emphasizing *specialization*. The contemporary liberal arts comprise studying literature, languages philosophy, history, mathematics, and science.

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

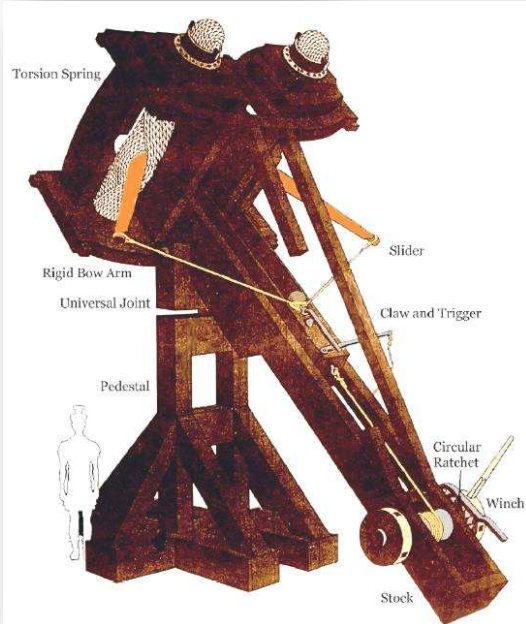
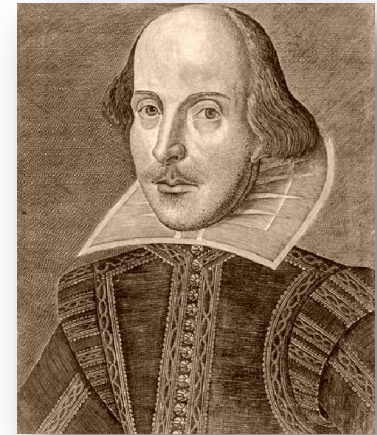
The same could be said for technical writers. A good technical writer must have analytical and aesthetic sensibilities in order to anticipate audience reaction and create good user documentation.



Technical writing and liberal arts:



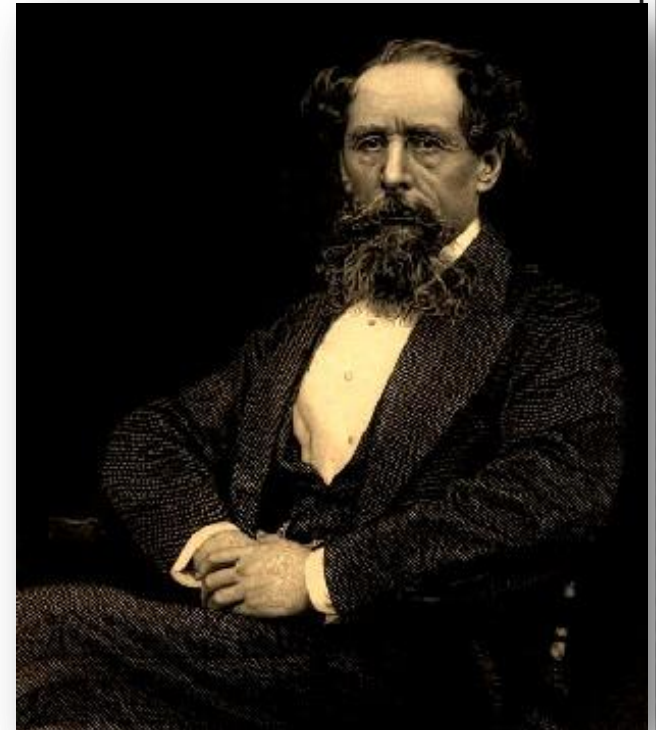
Why, since the Age of the Enlightenment, the Age of Reason, a time when empirical evidence began to dominate the epistemological landscape, did the academic world begin to split along scientific and literary lines? A conflict developed between two competing views of what passes for knowledge?



Approaches to technical writing

Technical writing and liberal arts:

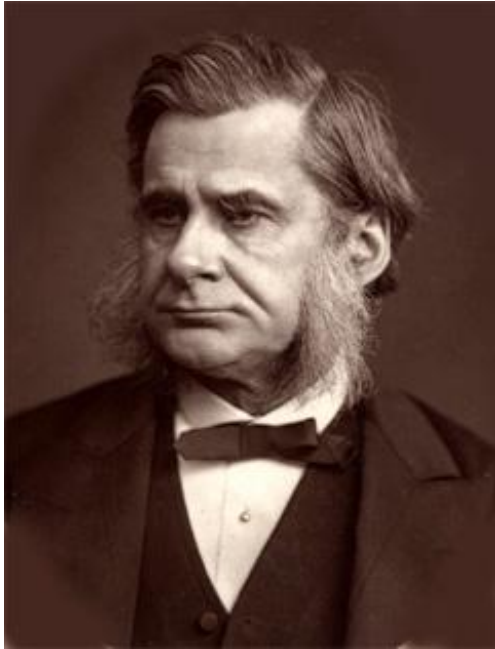
- Science, in Dickens view, does immense good—moral, social, and intellectual—but only when it works hand-in-hand with imagination and reverence.
- Dickens' objection in *Hard Times* was not to science itself, but to the reductionist principle that imposes stultifying order and leaves no room for emotion or imagination.
- “The facts of science are at least as full of poetry as the most poetical fancies,” Dickens wrote in an 1848 review of Robert Hunt's, *The Poetry of Science*.



Dickens sets the stage

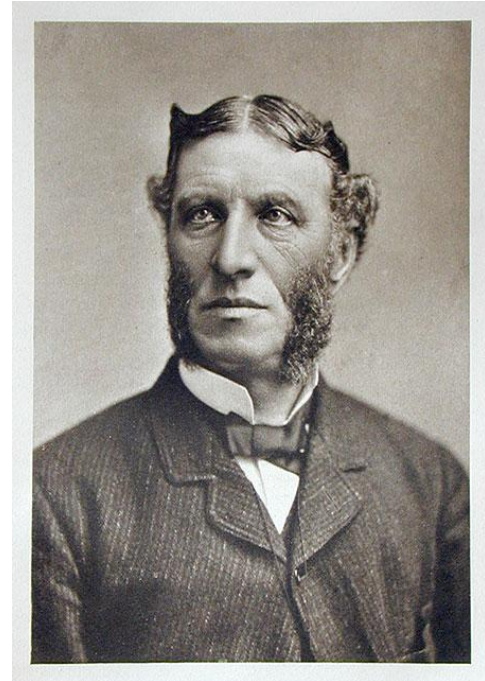
From: Alice Jenkins, “Literature: Wonders and Ologies,” February 2, 2012 *Nature*

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology



Thomas Huxley, 1825-1895, biologist, “Darwin’s Bulldog,” advocated natural selection, wrote *Evidence on Man's Place in Nature*, and “founded a remarkable dynasty of English scientists and thinkers.”

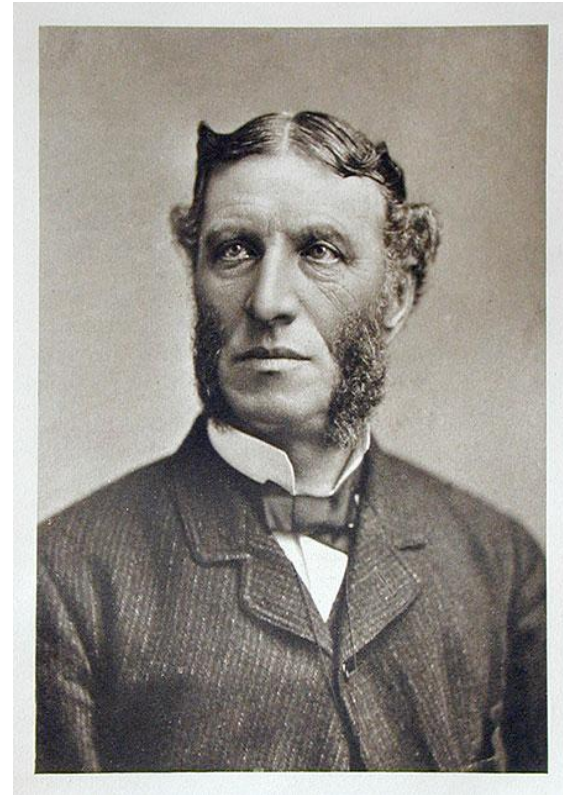
Whose the science person and whose the literary person?



Mathew Arnold, 1822-1888, English poet, literary and social critic. According to the Academy of American Poets, “Meditative and rhetorical, Arnold's poetry often wrestles with problems of psychological isolation.” Author of *Literature and Science* (1882).”

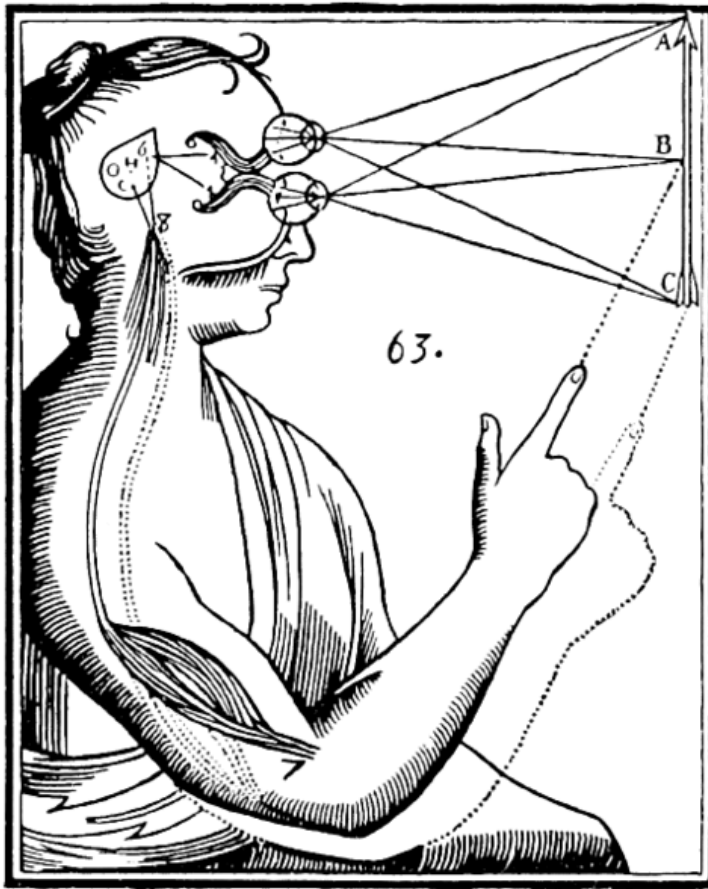
Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

In 1882 poet Matthew Arnold responds to Natural History Professor Thomas Huxley's call for the predominance of education to "pass from letters to science," to transition from "mere literary instruction and education" to "sound, extensive and practical scientific knowledge." This debate takes form today in that many college programs exist as "job training grounds" and not places of higher learning in the classical sense.



Arnold

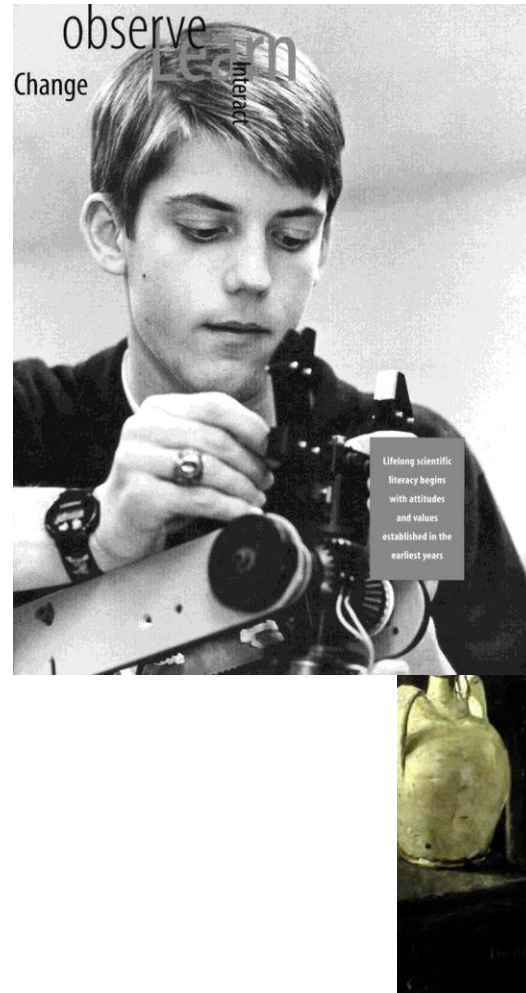
Technical writing and liberal arts:



The debate continues to this day on the value of a liberal vs. scientific education. As we are wont to do, instead of seeking synthesis, we have created an either or proposition, a one-side-or-the-other argument. Over the years the debate has digressed into an epistemological battle for what constitutes “truth and knowledge.” Does science have all the answers? Is science “more true” than, say, literature?

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

In Arnold's day, there was social value in obtaining a classical education, one where the aim was to, "know ourselves and the world, to know the best which has been thought and said in the world." Advocates of the natural/physical sciences proposed to make it the "main part of education" and push literature, or, the classics, into the background.



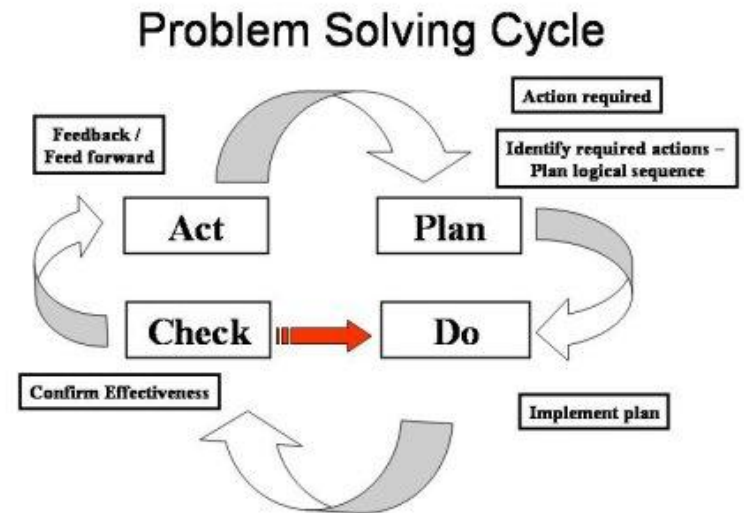
Approaches to technical writing

Arnold's claim was that "all knowledge is interesting" but that "when we set ourselves to enumerate the powers which go to the building up of human life, and say that they are the power of conduct, intellect and knowledge, beauty, and social life and manners, he (Huxley) can hardly deny this scheme, though not pretending to be scientific."



Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

“Last year a project manager at a large electronics firm told me ...that writers, to succeed ..., have to do more than just write fluently. Technical writing, he said, is one third writing proficiency, one third problem solving skill, and one third the ability to work with other people.”

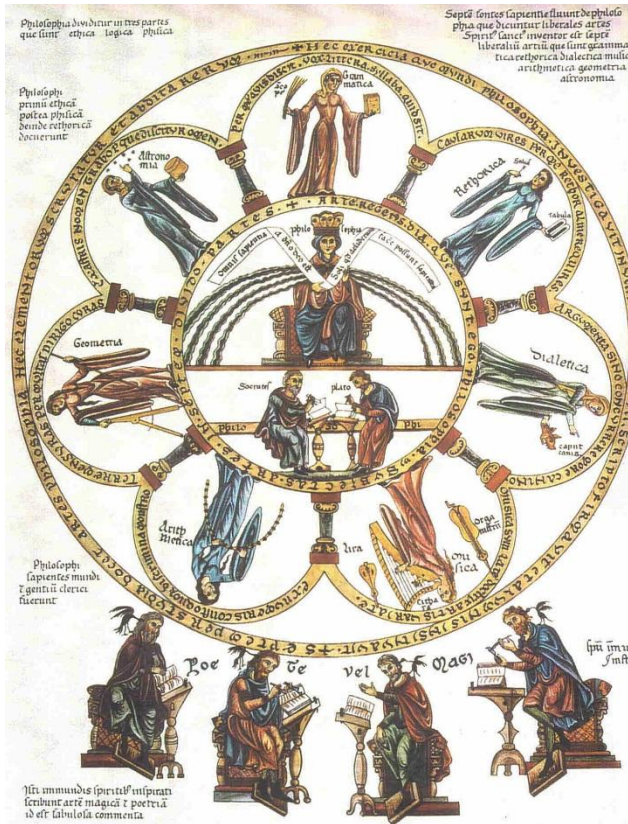


—Russell Rutter’s 1991 essay, “History, Rhetoric, and Humanism”

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology

And it is certainly ironic that a more classical definition of the term ***liberal arts*** denotes a curriculum that imparts *general* knowledge and develops the student's rational thought and intellectual capabilities, unlike the professional, vocational, and technical curricula emphasizing *specialization*. The “contemporary” liberal arts comprise studying literature, languages philosophy, history, mathematics, and science.

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology



The 7 liberal arts of the classical world.

The Trivium (The three roads):

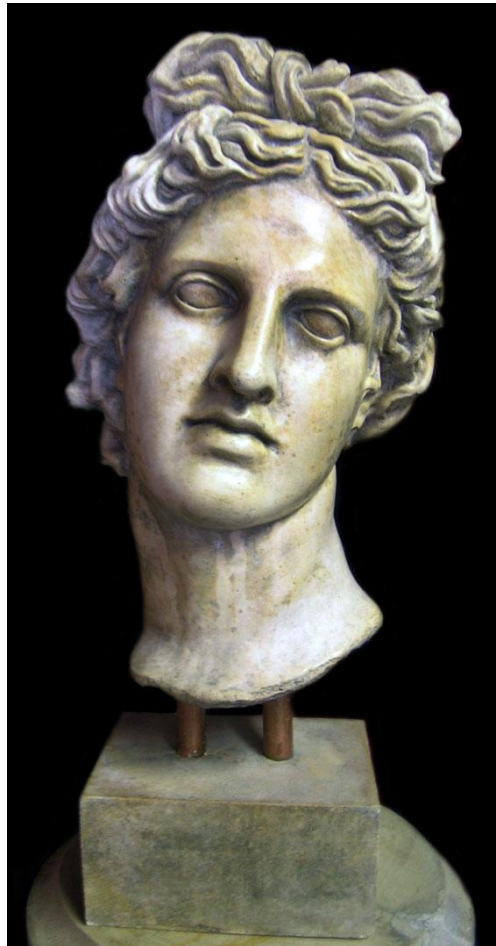
- ☐ Grammar
- ☐ Rhetoric
- ☐ Logic

The Quadrivium (The four roads):

- ☐ Arithmetic -- Number in itself
- ☐ Geometry -- Number in space
- ☐ Music, Harmonics, or Tuning Theory -- Number in time
- ☐ Astronomy or Cosmology -- Number in space and time

Approaches to technical writing

Technical writing: A place to integrate the importance of liberal arts and the humanities with science and technology



Apollo was the
god of both
poetry and
medicine

Approaches to technical writing