Technical Communication: An Introduction

Importance of Technical Communication
Qualities of Technical Communication
Memoranda

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Technical communication: what is it?

Another definition

The technical report is an act of communication by a professional in an organizational system to transfer information necessary for the system to continue to function.

J. C. Mathes and D. Stevenson. (1976). *Designing Technical Reports*. Bobbs-Merrill: Indianapolis.

Therefore, technical communication is **not**
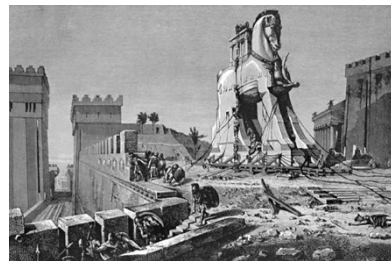
- Poetic
- Fictional
- Lyric
- Indirect

A little history

http://en.wikipedia.org/wiki/
Image:Rosetta_Stone_BW.jpeg

Rosetta Stone, 196 BC

Mycenaean Civilization: 1600 to 1100 BC

http://www.trojanhorseantiques.com/trojan_horse_mythology.htm

Heinrich Schliemann

http://www.mysteria3000.de/wp/das-testament-des-heinrich-schliemann/

Sir Arthur Evans

http://web.ics.purdue.edu/~rauhn/BAaegeantext.htm

Mycenaean Civilization: 1600 to 1100 BC

Silver rhyton, 1600 century BC, from Mycenae

http://en.wikipedia.org/wiki/Mycenaean_period#Palaces

Fresco of Mycenaean woman, 1300 BC

http://en.wikipedia.org/wiki/Image:Mycenaean_Woman.jpg

Mycenaean Civilization: 1600 to 1100 BC

Gold seal ring

http://www.hartzler.org/cc307/mycenaean/images/44.jpg

Fresco of lyre player from palace at Pylos

http://www.hartzler.org/cc307/mycenaean/images/60.jpg

Throne Room at Knossos

http://myfavoriteart.wordpress.com/my-favorite-pre-classical-works/

Some Linear B texts

http://www.94510.org/files/Linear_B_tablet.jpg

http://proteus.brown.edu/greekpast/4690

Michael Ventris

John Chadwick

http://home.att.net/~a.a.major/ventris.jpg

http://www.classics.cam.ac.uk/cms_misc/images/faculty/chadwick2.jpg

What was on the tablets?

- Inventories of products
- Lists of tenants and slaves
- Descriptions of property, real and personal
- Inventories and descriptions of weapons, armor and vehicles such as chariots
- Dispositions of soldiers and sailors to protect the coastlines

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Tablet PY An1, DMG 53

rowers going to Pleuron

in Louwa 8 men

in Rion 5 men

in Pherai 4 men

Tetaranes 6 men

in Aponis(?) 7 men

http://proteus.brown.edu/greekpast/4690

"Their contents consist of inventories of palace equipment, arms, slave personnel, and the like; land holdings of various categories, probably for tax purposes; offerings to various gods and goddesses, and similar material. Except for these palace records, no use of 'Linear B' is known beyond an occasional name on a Mycenaean vase."

Prof. W. Edward Brown. (1960). "An Introduction to Mycenology." *The Classical World*. Vol. 53. No. 6.

Back to the Rosetta Stone: What was on it?

Orders from the pharaoh about the remission of taxes and the maintenance of temples

http://en.wikipedia.org/wiki/
Image:Rosetta_Stone_BW.jpeg

Rosetta Stone, 196 BC

So, it would appear that bureaucrats and accountants invented writing.

http://tvbythenumbers.com/2009/10/28/broadcast-tv-revenge-of-the-accountants/31896

What conclusion can we draw?

Practical writing appeared at the dawn of history, and it will persist to the end.

Subjects most needed for engineering careers in industry:

Ranked from Thirty-Eight to One

From Olsen and Huckin. (1991). *Technical Writing and Professional Communication*, 2nd Ed. New York: McGraw-Hill

Subjects most needed

- Materials Engineering (38)
- Human Engineering (37)
- Electromagnets (36)
- Thermodynamics (35)
- Physics of Fluids (34)
- Numerical Analysis (33)
- Information and Control Systems (32)

Subjects most needed: the top four

1. Management Practices
2. Technical Writing
3. Probability and Statistics
4. Public Speaking

You may find this news distressing.

The Scream (1893), Edvard Munch
www.ibiblio.org/wm/paint/auth/munch/

Two main purposes of technical communication:

- Informing
- Persuading

*What might be documents of each type?*

Characteristics of technical writing

- Useful
- Understandable
- Concrete

Technical documents might include:

- Lab reports
- Project reports
- Research papers
- Feasibility studies
- Grant proposals
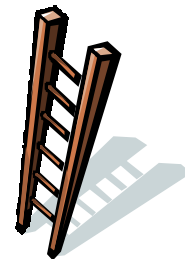- Software Documentation
- Progress reports
- Resumes
- Instructions

Time for a little bad clip art

Hayakawa's Ladder of Abstraction

Pure Abstraction

Ladder of Abstraction
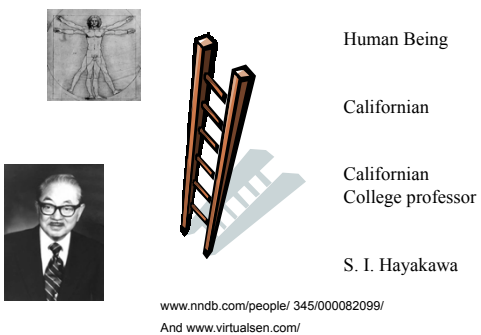
Pure Concrete
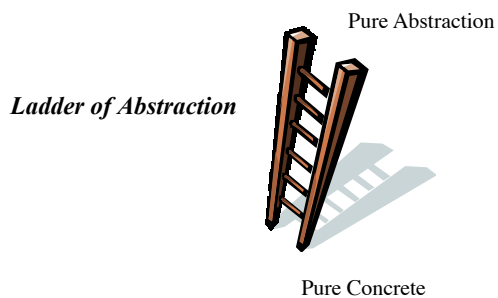
S. I. Hayakawa's Ladder of Abstraction

- Highly abstract at the top
- Less abstract in the middle
- Almost concrete at the bottom

Hayakawa's Ladder of Abstraction

Human Being

Californian

Californian
College professor

S. I. Hayakawa

www.nndb.com/people/ 345/000082099/
And www.virtualsen.com/

Let's take a side-jaunt…

Welsh Corgi

http://www.dogbreedinfo.com/pembrokecorgi.htm

Frilled Lizard

http://animals.nationalgeographic.com/animals/reptiles/frilled-lizard/

Sheep

http://blog.timesunion.com/guilderland/events-llamas-at-gade-farm-519-thacher-park-sheep-and-wool-gathering-62-tawasentha-mud-mania/1789/

Let's consider "quadruped"…

Let's consider "quadruped"…

Welsh Corgi

http://www.dogbreedinfo.com/pembrokecorgi.htm

Frilled Lizard

http://animals.nationalgeographic.com/animals/reptiles/frilled-lizard/

Sheep

http://blog.timesunion.com/guilderland/events-llamas-at-gade-farm-519-thacher-park-sheep-and-wool-gathering-62-tawasentha-mud-mania/1789/

So, which sentence conveys more information?

- On the way to work this morning, I saw a quadruped running through the neighborhood.

- On the way to work this morning, I saw a sheep running through the neighborhood.

Hayakawa's Ladder of Abstraction

Move

Advance

Ambulate

Run   Walk
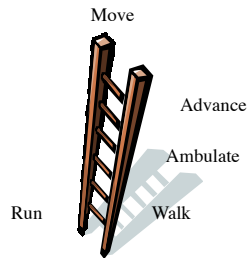
"An abstract term is like a box with a false bottom; you may put in it what ideas you please, and take them out again without being observed."

--Alexis de Tocqueville
Democracy in America

Character of technical communication

- Technical writing conveys technical information.

- Technical writing is **designed** to convey technical information efficiently.

Characteristics of *good* technical writing

- *Clarity:* it must be easily understandable.
- *Accuracy:* it must state things accurately.
- *Support:* assertions and conclusions must be supported by evidence or good authority and proper logic.
- *Good Documentation:* sources must be given and cited usefully.

Technical communication: grammar and style

- Technical writing must be grammatically correct.
- Technical writing must be executed in a clear style.

Technical communication: grammar and style

- Technical writing must be grammatically and syntactically correct.
  - Why?
- Technical writing must be executed in a clear style.
      Why?

So, if you don't know grammar…

You must learn it. Educated people will expect it of you, even if you weren't properly taught it in school.

Hint: get a good "College Handbook" or "University Handbook" such as the *Harbrace College Handbook.*

What happens if…

You ignore the rules?

Some Newspaper Headlines

■ **Miners Refuse to Work after Death**
■ **Hospitals are Sued by 7 Foot Doctors**
■ **Dealers Will Hear Car Talk at Noon**
■ **Police Begin Campaign to Run Down Jaywalkers**
■ **Lawmen From Mexico Barbecue Guests**
■ **Kids Make Nutritious Snacks**

http://lene.solbakken.net/lene/humor/newspapers.html

From *The Michigan Daily:*

Academic Integrity Still Plagues Campus

Why are these headlines funny?

In other words, what's wrong with them?

Remember: even subtle mistakes can be a source of unintentional humor.

So, remember

■ Language follows rules.
■ Follow the rules or be misunderstood.
■ Follow the rules and be understood
■ Context is important and must be made clear

There are different sorts of rules

- Grammatical Rules

- Syntactical Rules

- Logical Rules

Violation of any of these can cause problems

So, technical communication is governed by basic principles

- These principles are not difficult to learn

- They will help you
  - Decide how to write
  - What to write
  - How to organize what you write

  In other words, these rules are your friends; they will make your work easier

Conclusions about grammar and syntax

- It is a measure of intellectual competence.
- Observing the rules of grammar and syntax results in clearer thought and expression.
- Failure to observe the rules results in unclear expression.

In other words

If you write like you do not know what you are doing, why should people think you know what you're doing?

Or this blunt statement:

If you can't tell the people who need to know about your work what you are doing, then your work hardly matters.

The easiest proof is experience

- Once working you will find that you must do a great deal of technical communication.
- The more you rise, the more of it you will do.
- If you cannot do it, you will not rise easily.

In other words, I don't have to convince you; reality will convince you in about three years.

Points to recall

- Technical communication is not subjective: it involves language, which follows rules.

- There are principles for the drawing up of technical documents.

- Work that cannot be communicated is wasted.

Importance of technical communication

- It is important
- The better you are at it the higher you will rise
- The higher you rise, the more of it you will do

Audience

What is it?

http://wheelerblogs.com/2012/04/18/social-media-personal-and-visual-pt-1-know-your-audience/

Some things to consider

- Field of education   ■ Age
- Level of education   ■ Interest

Do different audiences require different things? What things?

Interest: participation in advantage and responsibility

From Merriam-Webster's dictionary

Mixed audience

What is it?

You write a memo for your supervisor.

Who actually might read it?

Each sort of reader will have a different interest in the document

- A project engineer, a lawyer and an accountant are unlikely to read a report for the same purpose.
- The engineer, lawyer and accountant know and don't know different things.

So, what do you do?

Let's look back:

The high school essay

Let's look back:
The high school essay

- Introduction
- Body
  - Paragraph 1
  - Paragraph 2
  - Paragraph 3
- Conclusion

What if we put things in a different order?

- Introduction
- Conclusion
- Body

In a technical memorandum, we call the three sections something different:

- Foreword
- Summary
- Discussion

-- You'll notice that the foreword and summary are sort of overview of the memo as a whole.

The foreword states

- The problem which is the subject of the report
- Your job with regard to that problem
- The purpose of the report

The summary presents

- The main actions you took
- The main findings of your project
- The implications of your findings
- Any recommendations you may have

The discussion

- Gives all the important details

- Gives proofs and arguments

    The discussion is for specialist readers

So, a memo consists of

- Overview
    - Foreword
    - Summary
- Discussion

The foreword consists of three things

- Problem statement
- Task statement
    - Criteria
    - Constraints
- Purpose statement

What is a criterion?

- A standard on which a judgement or decision may be based.

    - *Webster's Ninth New Collegiate Dictionary*

In other words, the criteria presented to you indicate what it is you have to do to accomplish the job.

- "Design a computer game the can be played by someone who cannot read."

- "Design a bicycle frame that can safely support a rider who weighs 115 kilograms."

What is a constraint?

- A constraining condition, agency, or force.

  - *Webster's Ninth New Collegiate Dictionary*

In other words, a limit you are working under.

Examples:

- "You have eight weeks within which to produce the working prototype of a computer game."

- "You may detail one summer intern, working half-time, to help you code the computer game."

So, the foreword answers three questions

- What's the trouble?

- What am I supposed to do about it?

- What's this report for?

The summary answers these questions

- What actions were taken?
- What were the findings or results of these actions?
- What do they mean?
- What, if anything ought to be done?

A memo has a heading containing

- The names of those receiving it
- The name of the writer
- A subject line
- The date

To: Dr. Les Olsen
Manager, Facilities
Wolverine Electronics

From: M. A. Gilbert
Project Engineer
Wolverine Electronics

Date: 12 September 2006

Subject: Proposed lighting for Terre Haute facility

Example Header

WOLVERINE ELECTRONICS, INC.
1817 Victors Way
Ann Arbor, MI 48104

To: Dr. Les Olsen
Manager, Facilities

From: M. A. Gilbert
Project Engineer

Date: 12 September 2006

Subject: Proposed lighting for Terre Haute facility

Dist: Bob Brown, Manager, Wolverine/Terre Haute

Example Header

Memoranda (or memorandums)

- Are often written for a mixed audience

- Have overviews made up of forewords and summaries

- Have headings

Three main elements of memos

- Heading
- Overview
  - Foreword
  - Summary
- Discussion (Sometimes called "Details")

It is "Foreword" and not

- "Forward" (wrong word)
- "Foreward" (not even a word)

The Scream (1893), Edvard Munch
www.ibiblio.org/wm/paint/auth/munch/

A little more detail. . .

- Foreword
  - Problem statement (often two sentences)
  - Task statement (your task or job)
    - Any Criteria
    - Any Constraints
  - statement of document purpose

- Summary
  - Actions taken
  - Findings
  - Implications
  - Conclusions
  - Recommendations (if needed)

- Discussion

Summation: the memo

- Header
- Overview
  - Foreword
    - Problem statement (often two sentences)
    - Task Statement (your task or job)
    - Document Purpose statement (the purpose of the report)
  - Summary
    - Actions taken
    - Findings
    - Implications
    - Conclusions
    - Recommendations (if needed)
- Discussion ("Details")