

Technical Communication

- Objectives
 - What is technical communication?
 - Measures of excellence.
 - Unethical and illegal conduct.
- Main references
 - M. Markel, Technical Communication, 9th Ed., Bedford/St. Martin's, 2010.
 - J.G. Paradis and M.L. Zimmerman, The MIT Guide to Science and Engineering Communication, 2nd Ed., MIT, 2002.

Technical Communication

- Technical communication can be viewed in two ways.
 - The **process** of making and sharing information with others about a technical subject.
 - A set of **applications**: the documents written and the oral presentations delivered in the process.
- Measures of excellence
 - Content: Honesty, accuracy, and comprehensiveness.
 - Form: Clarity, conciseness, correctness, and professional appearance.

Measures of Excellence - Content

- Honesty
 - Tell the truth and do not mislead audience.
 - Science depends on incremental advances made by many.
 - Each can only contribute by truthfully reporting the discovery.
 - Dishonesty can mislead and harm others.
- Accuracy
 - Get your statement straight.
 - Do not exaggerate, nor understate.
- Comprehensiveness
 - Be complete and self-contained.



Measures of Excellence - Form

- Clarity
 - Convey the intended meaning that the audience can understand **easily**.
- Conciseness
 - Convey a lot of information economically.
- Correctness
 - Adhere to conventions of grammar, punctuation, spelling, mechanics, and usage.
- Professional appearance
 - Adhere to standard of your field.
 - Well formatted and neatly printed.

Ex British Navy Directive

"It is necessary for technical reasons that these warheads should be stored upside down, that is, with the top at the bottom and the bottom at the top. In order that there may be no doubt as to which is the top and which is the bottom, for storage purposes, it will be seen that the bottom of each warhead has been labeled with the word TOP."



Ex Express Opinion

- "It is our opinion that, in regard to the performance of the algorithm, the statistics pertaining to the experiment on a different data sample will appear to indicate the same tendency."
- "We believe that the statistics from another data sample will show the same performance tendency."



Unethical and Illegal Conduct

- Difference btw honesty and accuracy is a matter of intention.
- Unethical conduct in research and communication
 - Plagiarism.
 - Fabrication of research data.
 - Misleading audience.
- Illegal conduct
 - Copyright infringement.

Plagiarism

- Plagiarism is the act of using someone else's words or ideas without giving credit to the original author.
 - It is unethical.
 - Consequence to a student.
 - Consequence to a researcher.
- How to avoid plagiarism?
 - Cite the source accurately.
 - Usual way of citation.

Data Fabrication

- In carrying out research, one might feel pressured to report only positive, statistically significant findings.
 - Trimming: Smooth irregularities to make data look extremely accurate and precise.
 - Cooking: Retain only those results that fit the theory and discarding the others.
 - Forging: Invent some or all of the data, or even report experiments that were never performed.
- It is unethical and one must resist such pressure.
- Positive attitude toward non-positive findings.



Do Not Mislead Audience

- False implications
 - Ex "To achieve purpose U, you must use method M".
- Exaggerations
 - Ex "Method M solves the problem P."
- Legalistic constructions
 - Ex "System S is designed to operate in the entire range R of conditions."



Copyright

- Copyright refers to a person's right to copy the work he or she has created.
- Copyright law stipulates that only the copyright holder can copy the work.
- Who is the copyright holder?
 - Work made for hire.
 - At University of Guelph.
- Legal consequence of copying without permission.

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