How to Use Technical Synonyms and Antonyms*

Synonyms

Technical synonyms are similar words or phrases being used in technical fields of research and development. A word or phrase may have various meanings (senses). For example, the following words are synonyms for several meanings of the adjective ‘technical’:
- industrial, mechanical, scientific, technological;
- methodological, practical, procedural, systematic;
- literal, narrow, nominal, official, pedantic, strict;
- expert, official, precise, professional, proficient, specialized;
- skilful, skilled.

Related words can be associated with ‘technical’ as well:
- limited, peculiar, restricted, specific, etc.

There is a diversity of synonyms in the broad sense and the rule of thumb is to include the most informative term within a desired context. Common examples of technical words being used interchangeably are shown below:
- academic, scholarly, scientific;
- technique, method, approach, algorithm;
- formula, equation;
- analysis, study, investigation, research;
- machine, device, apparatus;
- mean, average, estimate;
- security, protection, encryption;
- authentication, verification;
- recognition, identification;
- discussion, dialogue;
- dispute, debate;
- carried, mediated;
- speed, velocity.

Similar phrases are also observed in the literature:
- mathematical modeling, computational experiment, computer simulation;
- international education, global education;
- technical architecture, system architecture.

In a strict sense, however, physicists would say that ‘speed’ is just the magnitude of a ‘velocity’ vector. Also, specialists in operations research would point out that ‘computational experiment’ and ‘computer simulation’ are two different terms.

Abbreviations may also have synonyms:

Some equivalent words have the same root but are written with different suffixes or prefixes:
- theorist, theoretician;
- experimenter, experimentalist;

or originate from other languages:
- behavior, behaviour; color, colour; center, centre; meter, metre.

However, certain words that sound somewhat similar are not synonyms and have completely different meaning:
- physicist, physician;
- geologist, genealogist, gynaecologist;
- metrology, meteorology, mereology.

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Antonyms

Technical antonyms generally describe technical objects and subjects. The terms ‘antonym’ and ‘opposite’ are synonyms. In contrast to the diversity of synonyms, the number of antonyms for a particular term is rather limited. For example, some antonyms of the adjective ‘technical’ are:

- general, nonspecialized, nontechnical.

Near antonyms of ‘technical’ are:

- common, generalized, nonspecific, ordinary, universal;
- inexpert, nonprofessional, unprofessional.

Some examples of antonym pairs are the following:

- big, little;
- greater, lesser;
- large, small;
- long, short;
- specialized, general;
- natural, artificial;
- synergy, dysergy.

Antonyms are frequently constructed with some common prefixes: ‘anti’, ‘dis’, ‘in’, ‘non’, ‘un’, etc.:

- matter, antimatter;
- approval, disapproval;
- homogeneous, inhomogeneous;
- symmetric, nonsymmetric;
- known, unknown;

and some suffixes:

- wired, wireless, etc.

Note that the said prefixes/suffixes should be used with a proper understanding of the technical terminology, for instance, the words antisymmetric and nonsymmetric have different meaning.

Technical Language vs. Technical Jargon

Common technical vocabulary which can be understood by most readers is appreciated. Specific terms and abbreviations should be clearly explained:

- Qubit, or quantum bit, is a unit of quantum information;
- The technical term for mass concentration is mascon;
- Characteristic line is the technical term for the best fit of linear regression.

The most systematic use of terms and definitions takes place in mathematical writing where the use of synonyms is discouraged. Thus, synonyms are more often observed in qualitative research rather than in quantitative research. The art of technical writing permits the balanced inclusion of synonyms if this does not follow to multiplication of unnecessary technical synonyms (MOUTS). Such multiplication may occur due to: overuse of antonymic words, like nonartificial, instead of natural;

circulation of alternative phrases, idiomatic expressions or acronyms; introduction of junior synonyms in taxonomy, etc. The good technical writing style relies on accuracy and simplicity. Textual redundancy (or pleonasm) as a result of rephrasing as well as elegant variation of synonyms are not recommended. Occasionally, synonyms become useful in avoiding repetitions whenever a technical term appears too frequently in the same paragraph/page.