

Jargon is a Barrier

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The statement that communication between engineers and life scientists has been difficult “because most engineers and physical scientists approach a problem more from a quantitative, numbers-based perspective, while many life scientists rely on descriptive measurements” in the January 2014 issue of *Prism* article “Culture Clash” is misleading. Engineers don’t jump directly to quantitative analysis of a solution before they have created a concept for the product. Qualitative conceptualization (“the idea”) is the first step in an engineering design. If not, then there is nothing to analyze, no reason to compute.

If engineers have a difficult time communicating with other non-engineering professionals, it is because of two things: first, engineers have their own set of jargon that they use as shorthand to replace complex engineering concepts that would take many words to fully explain. They develop this jargon over the four or more years of taking engineering science courses in their undergraduate and graduate educations.

Second, other professions, especially medicine and law, have rich sets of vocabulary that they acquire in their professional training. It is this mismatch of the vocabularies of engineers and other professionals that must be overcome if meaningful communication is to take place.

When I taught my Transport Process Design course, I assigned three full-blown design projects each semester. Each project required an elaborate design report of professional quality. Each report was assigned two equally-weighted grades, one for technical quality and the other for communications ability. Contributions to the second grade were clear writing, attractive and well-labeled illustrations, and orderly progressive format. I instructed the students to write so that their mothers could understand it. Jargon words were to be avoided or defined, so that, for instance, if they were to use the term “viscosity”, then they should explain that viscosity could be equivalent to fluid thickness. These reports were pre-evaluated by classroom peers before I graded them, and some of their peers were harder on the use of jargon than I was.

Engineers who go through undergraduate experiences such as this should have no problem communicating with other professionals. They are taught to think about what they mean to say and to explain it in clear common language. They can use their engineering shorthand when around other engineers, but know to revert to more wordy, but understandable, explanations with others. Then, when talking to those from other professions, if the others perceive that the engineers are making every attempt to communicate clearly with them, they will often respond by reverting from their own jargon to clearly explain things that they understand so the engineer can understand as well. Communication requires offered information and response. It should not be difficult!