

1096-AF-861

Paul Zorn* (zorn@stolaf.edu). *Mathematical writing and effective thinking.*

Writing and mathematics are both hard, and mathematical writing is doubly difficult. Mathematical language and symbols are formal, precise, and sometimes forbidding, and naturally so: communicating technical ideas and fine distinctions inevitably requires extra linguistic effort. Parsing the ϵ - δ definition of uniform continuity of a function on an interval, for example, is a difficult linguistic task in its own right, mathematical subtleties aside. We mathematicians realize, for instance, that “each” and “every” can mean the same thing in such contexts, and that “whenever” can signal universal quantification rather than any reference to time. Students, by contrast, need to develop these intuitions with experience.

Grappling with mathematical language is undeniably, and perhaps inevitably, tough for students. But doing so is essential to deep mathematical understanding, clear communication, and effective thinking. I’ll suggest some ways of encouraging and promoting that encounter.

The good news is that this hard mathematical and linguistic work pays off, both in mathematics itself and in other areas of academic study and, I’ll claim, in deepening and enriching our intellectual lives. (Received September 10, 2013)