

written in the margin may sound needlessly absolute about things that are often matters of the grader's own taste. The same professor deliberately uses courteous forms such as "Please" a great deal, along with phrases such as "I suggest . . ." or "Have you considered . . . ?" A refreshingly light touch indeed, compared with such thundering exclamations as "So what!" and its ilk.

The light touch in correcting papers may also offer another way of improving communication with students, but achieving this style may come at the cost of more time and effort to compose appropriate phrases and write them down. Does this just add one more unwelcome burden to the grader? Maybe not, if the grader can "think smart." By this I mean that a balance needs to be found between correcting everything a student submits in a flurry of terse remarks and simply pointing out a few important items for improvement with enough grace that the student will appreciate and accept the analysis.

While touching on the subject of thoroughness in marking, let's suppose a grader does cover the margins of a paper with all manner of meticulous corrections (goodness knows, an occasional paper appears to deserve such treatment!). Is such effort likely to benefit early undergraduates? I doubt it. Thoroughness is more appropriate for the draft of a thesis, rather than for an assignment, term paper, or lab report. Technical errors need to be spotted, but I have found that students tend to ignore large collections of comments on minutiae. Learning good habits of problem solving and reporting takes time, so grading them needs to be viewed as part of a long process. In my view, it's better strategy to criticize a few points carefully than to try and correct many shortcomings at once.

Is there any systematic way to improve the quality of correcting papers to make it a more positive experience for students and instructors? I am persuaded there is, but to explain why, let me start with an important generalization. Richard Felder has observed in these pages that the quality of a student's experience in a university is strongly affected by the kind of relationship that the individual has with members of the teaching staff.<sup>[2]</sup> For this reason, I favor replacing terse comments jotted in tight margins with face-to-face discussions between students and their instructors. This may mean, as it has for me, a greater use of the tutorial mode of teaching at the expense of formal lecturing.

Yet, no matter what methods are used to teach, there is an irreducible level of homework and laboratory reporting that undergraduates have to submit. I'd therefore like to suggest a few guidelines for jotting comments in margins. Unable to itemize the steps as ABCs, I have dubbed them WXYZs instead. They are:

**W** It's **W**orse if it's terse.

**X** **X** marks an error without providing details and

can be jotted quickly. Also, small **x**'s seem more respectful than large ones.

**Y** **Y**ahoo is taboo. Courtesy is cool. Encouragement is empowering.

**Z** **Z-Z-Z** (the cartoonist's symbol for sleep). Indifference is the reaction to an excess of criticism, especially if subjective. **Z**ealous graders beware.

By whatever method we graders conduct our art, students will read and weigh our words of criticism. The pressures of time may make terseness a temptation, but seldom a virtue. Those of us who grade papers and reports would do well to consider carefully the tone of our comments as we write them in margins eagerly waiting to receive them.

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2. Felder, R.M., "What Matters in College," *Chem. Eng. Ed.*, **27**(4), 194 (1993) □

## ChE books received

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*Organometallics in Synthesis: A Manual*, Schlosser (editor); Wiley, 605 Third Avenue, New York, NY 10158; 603 pages, \$100 (1994)

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