LETTER TO THE EDITOR


I am writing in response to Short Communication, “K-12 Calculator Usage and College Grades” that appeared in Volume 56, No. 1, 2004 of *Educational Studies in Mathematics*. The editor cleverly placed this communication following an article by Zevenbergen (2004), “Technologizing Numeracy: Intergenerational Differences in Working Mathematically in New Times.” One theme from the latter article was that younger people are less concerned than previous generations about numerical accuracy. They tend to assume that, when on a job, they will have technology to deal with such things and they can move on to address other issues.

It has been some years since I taught the courses calculus and linear algebra that you mention. Here are the questions that I would be asking myself if I was now teaching them.

1. How can I best make use of technology (computer algebra systems, Sketchpad, Mathematica, etc.) to enhance the mathematical concepts that I’m teaching?

2. If I was teaching prospective teachers then what experiences could my courses provide that would enhance the likelihood that they would make good choices in selecting technology that would later enhance their students’ understanding? In short, how could I model the best teaching with technology so my students could become great teachers?

3. How can my examinations build upon my students’ ability to select the appropriate technologies (during the exam) while still getting at their understanding of mathematics? Perhaps students with a great deal of a variety of technology experiences would do better on exams that capitalized on this kind of expertise and thinking than students who had little prior experience. In short, I’m not sure we can give the same kinds of exams that we have traditionally given.

4. Assuming that I am making a wise selection of uses of technologies in the courses that I teach then are students who had some technology experiences (not just calculators) in high school likely to make more advances in their understanding than those students who have less experience with technology prior to college?

5. What experiences can students have in my courses (using technology) that will increase the chances that they will have success in

mathematically related areas in graduate school or in professional positions?

These questions may not be particularly well crafted but they might contain ideas worth considering. They derive, in part, from the technology principle of the NCTM (2000) Principles and Standards for School Mathematics that was prepared with guidance and support of the MAA and AMS.

These questions become even more critical as students enter universities with more experiences with technology. If they are taught as though there is no technology available then they might find it hard to maintain their interest and otherwise benefit from their instruction. Students at selective colleges might even wonder why their college courses use less technology than their secondary school experiences.

How can we engage students’ interest and curiosity then build upon the positive experiences they might have had with technology? How can we give them the idea that mathematics is more than the rote learning of algorithms?

REFERENCES


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