

### Reflection 3

#### Summary and Discussion of Main Points:

This article is about the appropriate use of technology in the classroom. They give 5 guidelines to help us see how to use technology in our classrooms. The guidelines are introduce technology in context, address worthwhile mathematics with appropriate pedagogy, take advantage of technology, connect mathematics topics, and incorporate multiple representations. Introducing technology in context is important because we need to make it clear that the mathematics behind the technology we are using is the most important part. It's not an afterthought. Next, we should teach our mathematics with technology when it is appropriate and useful. We shouldn't just teach a mathematical topic or concept because the technology is there to assist in teaching it. Next, we need to use technology only when it is advantageous to the lesson. We shouldn't use technology just because it's a cool way to teach it or it's easier for us as teachers. We need to use technology when it extends the students' abilities to do mathematics whether it be computations, visualizing or graphing. Next, we need to be able to connect different areas of math to each other. It helps the students be able to generalize information. Last, we need to incorporate multiple representations.

#### Reflection/Implications for my teaching

For me as a preservice teacher, reading this article helped me visualize how I would use technology my own classroom. Going along with the first guideline, we need to introduce technology in context. If we introduce the technology first, without giving it the appropriate introduction, then it will seem like we are putting the mathematics second. We need to use technology to aid in teaching mathematics. I really liked a quote from the text, "Focus on learning *with* technology, not *about* technology."

The next guideline is having activities that are based on the curriculum. We need to make sure that we are helping our students achieve the learning objectives we set for each unit and lesson. Just because technology is available that is related to the content doesn't mean that we have to use it. For me as a teacher, it makes me realize that in order to vary teaching techniques and accommodate different learning styles, I need to use technology sometimes, but not always.

The next guideline is taking advantage of technology. I really liked this one. It talks about the main reason why I wanted to use technology in my classroom prior to this class. Technology can open doors to our students to explore and discover math for themselves. Along with the previous guideline, we need to use technology when it is useful and can help us extend and enhance what we can do. Especially with technology like Geogebra, the students can manipulate the graphs or figures to discover properties or relationships.

The next guideline is connecting mathematics topics. There are two ways that we should do this. We should not only connect math topics to other math topics, but

we also should connect math to 'real-world phenomena'. I know that when I was in school and also when I was tutoring or helping other students, it was hard to see the connections between different math classes. I wasn't ever shown how algebra connected to geometry while I was in school. I think that this is a very beneficial use of technology. You can graph things and show the formula. You can use algebraic manipulation along with geometric manipulation and show how the different things connect.

The last guideline is incorporating multiple representations. I feel that this guideline is especially useful when we use the help of technology. We can manipulate data, figures and graphs and also switch between multiple representations. I feel like the quote in the first paragraph explains it really well. "We, as mathematics educators, should make the best use of multiple representations, especially those enhanced by the use of technology, encourage and help our students to apply multiple approaches to mathematical problem solving and engage them in creative thinking."

### **Response to prompts (as appropriate)**

- Introduce technology in context
- Address worthwhile mathematics with appropriate pedagogy
- Take advantage of technology
- Connect mathematics topics
- Incorporate multiple representations

### **Comments/questions for class discussion (at least 2-3 items)**

On average, how many lessons should we incorporate technology into?

How do we know which things will work in our classroom?