

Sabbatical Report
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“Gaining Experience in an Elementary Math Classroom”
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I spent my sabbatical gaining experience in an elementary classroom. I have taught GVSU's Mathematics for Elementary Teachers I and II since the mid-1990's and I wanted to get an in-depth experience teaching and observing and interacting with elementary students in mathematics. I worked in the second grade mathematics classroom of Mrs. Kathy Thwaites at Knapp Charter School, located on Leffingwell Street in Northeast Grand Rapids. I went daily and in fact, I went into May, beyond the GVSU winter semester.

Although Mrs. Thwaites has been a teacher for over 30 years, this was only her third year teaching second grade and she warmly welcomed me into her classroom. I have since been able to share my experiences with my pre-service students. My confidence has grown, as a result.

When my students use, for example, geoboards for polygons, Venn diagrams for classification, and 3-dimensional polyhedra models, I can now relate to them the capabilities of second graders. I worked with children excited that they could count all of the triangles formed on a geoboard with overlapping geobands. I have now worked with children who, when working with polyhedra models, were able to find a paper towel roll and a coin for cylinders, a Kleenex box for a rectangular prism, and look up an Egyptian pyramid in the classroom encyclopedia set for square pyramids. The children loved my activity of having their seat partner put a shape into their hands, while they closed their eyes, and used the attributes 'felt' to identify it.

An important thing I learned firsthand was how capable children as young as second grade are. After I taught the class the basic fact strategy sometimes referred to as the 'missing neighbor' strategy, I had students who extended the strategy to larger numbers. Here is how the strategy works: For the basic fact $6 + 8$, (which is solved by many students by counting lots of fingers) I had the children make a stack of 6 cubes and a stack of 8 cubes. If one takes one cube off of the longer stack and places it on the smaller stack, both are now 7 cubes long. Hence, $6 + 8$ can be recognized as a fact where both numbers share 7 as their neighbor (on a number line) and $6 + 8$ can be computed by using the easier doubles fact of $7 + 7$. A few days later, Kyle said he knew that $49 + 51$ was the same as $50 + 50$! One day, when an 8th grade student was in the classroom, she commented that the jet exhaust from two planes in the sky made perpendicular lines, many of the second graders corrected her, insisting that, although the jet lines were crossing, they were not forming the necessary right angles that were required if the lines were truly to be perpendicular. Second graders have very capable brains!

Another important experience I had was seeing first-hand the reality off what it is like to be an elementary school teacher. It is not unusual for Mrs. Thwaites to put in 60 hours of

work per week. She is often at the school on Saturdays and Sundays to prepare for the following week. We have to be preparing our students well because once they are in the field teaching, they simply may not have lots of time and they must have confidence in the subject matter. I think GVSU's MTH 221 and MTH 222 go a long way towards giving pre-service teachers the skills and experiences they will need to be confident and creative with their mathematics lessons.

It was a wonderful learning experience. I have been teaching the GVSU courses, Mathematics for Elementary Teachers I and II for many semesters now. I truly appreciate the opportunity I had to experience an entire semester working with second graders.