Manipulative Utilization in Teaching Geometry

For this entry, I selected the "Pick's Formula" activity. Apparently, I managed to make it through middle school and high school without ever having used a geoboard myself (or any manipulatives, for that matter), so any activity involving geoboards was new and interesting to me. This activity was also interesting because of its crossover with algebra (learning about functions using an *inputs-machine-outputs* model) and incorporation of problem-based learning techniques.

This piece reflects what I have leaned about using manipulatives in mathematics education. My secondary mathematics experience as a student occurred between 1975 and 1982, and I do not recall any use of manipulatives during that time (unless you count a slide rule as a manipulative, and I learned how to use that in a science class, not a math class). Learning that manipulatives are an important tool for teaching math was one of the two major misconceptions about education that I needed to have *reprogrammed*. Manipulatives help to address issues related to multiple intelligences and various learning styles, aiding those students who are more visually or kinesthetically oriented. This activity also helped to reinforce one specific mathematics problem-solving skill: breaking up large problems into smaller problems. When finding the area of the various shapes generated, I was reminded that the easy way to do it was to break the complex shape up into smaller simple shapes with areas that could be easily calculated in my head. I think one of the reasons that some students get turned off to math is that they are intimidated by the complex problems. This activity taught me to remember to teach my students that every complex problem can be broken up into smaller problems.

This activity, along with several others, definitely convinced me that I should be on the lookout to use manipulatives in my lessons. For many concepts, I will be on the lookout for ways to teach the concept using manipulatives, in addition to the traditional lecture style and technology-based lessons. In addition to the instruction value, using manipulatives should also be a way for me to include some *fun* time in my classroom activities. I can come up with something where my students are thinking "Wow, we get to take a break and do something fun today." When, in reality, they are actually learning something along the way.