

Teachers' Perspectives on Teacher Education

Catherine Carrigan, Middle Grades Teacher

Since 2007, I have been teaching Pre-algebra and Algebra 1 for eighth grade in Tallassee City, Alabama. Southside Middle School is approximately 600 students of which 60% are on free or reduced lunch. The demographics of the student population are about 70% white, non-Hispanic and 30% African American. The elementary school in the district is a Title 1 school.

My educational experiences at Auburn University played an integral role in my effectiveness as an educator. I graduated with a Bachelors of Science in Secondary Mathematics Education under Dr. W. Gary Martin and Dr. Marilyn Strutchens. The mathematics education courses that I took were Teaching with Technology, High School Mathematics Methods, and Middle School Methods. The most beneficial aspect of these courses was that the assignments during the class were geared for us to build a conceptual understanding of the concepts that we had memorized as children and then how to teach those concepts using manipulatives. The experience of learning concepts such as binary operations with rational numbers and proportional reasoning using manipulative materials was eye opening. We also were exposed to open ended problems through the use of *Connected Mathematics Program* and *Interactive Mathematics program* series. Dr. Martin and Dr. Strutchens created a simulated classroom experience where the desks were set up in cooperative groups so when we presented to the class we treated our classmates like students and we got experience teaching reform mathematics. Both professors also executed higher order questioning to model how teachers are suppose to facilitate not dictate what is learned. For the practicum experiences in the field, we had the tools to create inquiry based learning opportunities for the students. We also thoroughly examined *Principles and Standards for School Mathematics* in all of the courses which provided us with a strong reasoning for teaching the reform way (NCTM, 2000).

During my pre-service and induction years, Dr. Martin and Dr. Strutchens were able to place us with teachers who favored reform mathematics because of the NSF-MSP program TEAM-Math (Transforming East Alabama Mathematics). Comprised of hundreds of teachers in fifteen school districts, TEAM-Math established quarterly meetings on Saturday mornings, curriculum writing teams, textbook adoption teams, teacher leader teams, and Summer Institutes from 2003-2009. As an undergraduate, I attended the quarterly meetings and started building a network of teachers to collaborate with. Each of the quarterly meetings always had a focus such as one of the Standards for School Mathematics from *Principles and Standards for School Mathematics* (NCTM, 2000) for the upcoming nine weeks. There was also Principles for School Mathematics integrated into each of the meetings. The breakout sessions were grade specific and led by teachers. These professional development meetings were effective because it was sustained throughout the school year and was relatable to my classroom. The theme carried throughout the teacher education program was "It's not what you teach, it is how you teach" which I wish more teachers would embrace.

The most effective pre-service experience includes a cooperative teaching that currently practices reform mathematics in their classroom. When the pre-service student has learned new

methods of teaching, it needs to be practiced in an environment that is set up for reform mathematics. Through the TEAM-Math program there was a strong partnership of teachers with Dr. Martin and Dr. Strutchens who communicated frequently.

In the spring of 2009, I was accepted as Noyce fellow in the TEAM-Math Teacher Leader Academy to begin working on a Masters degree in Secondary Mathematics Education. The program was made up of five mathematics education courses and five graduate level mathematics courses. A mathematics professor developed several courses aimed for secondary teachers: Number Theory, Non-Euclidean geometry, Numerical Analysis, and Advanced mathematical connections to the secondary mathematics curriculum. The education courses included: Trends and Issues in Mathematics Education, Equity Issues in Mathematics Education, Research Studies in Mathematics Education Curriculum and teaching secondary mathematics, and Evaluation in secondary mathematics education.