Highly Effective Teaching Strategies That Impact Low Achieving Mathematics Classrooms
Erin M. Yacovoni
Advisor: Dr. Patricia M. Hart

**Teacher Development**
- Teacher preparation should lead to teachers mastering their subjects (Ball, 2010, ¶ 17)
- Teachers should be able to analyze a student’s response (Jacobs & Philipps, 2010, p. 101)
- Teachers need to be better prepared when they enter the work force (Ball, 2010, ¶ 22)

**Lesson Plan Success (5E Cycle)**
- 5E cycle: focuses on a cycle that will help students understand the lesson at hand (Eisenkraft, 2003, p. 57)
- Jeff Marshall and Robert Horton found that teachers who had students explore before they explained the lesson received high proficiency ratings (2011, p. 95)

**Introduction**
- Research on finding a set of teacher strategies that will help students succeed in mathematics and science regardless of economic status
- Need for teachers to perform “high-leverage” practices (Ball & Forzani, 2011, p. 19)
- It is unethical that students are not receiving a high quality education (Ball, 2010, ¶ 22)

**Focus Areas**
- Teacher Development
- Lesson Plan Success (5E Cycle)
- Science, Technology, Engineering, and Mathematics (STEM)
- Common Core State Standards

**Science, Technology, Engineering, and Mathematics (STEM)**
- Help students understand science and the language that surrounds science (Breiner et al., 2012, p. 4)
- STEM careers are on the rise (Thompson & Bolin, 2011, p. 19)
- STEM helps students reach a higher level of thinking (Laird et al., 2011, p. 26)

**Common Core State Standards**
- The Common Core State Standards provide teachers and parents with clear and precise standards (Philips & Wong, 2010, p. 39)
- Take the guesswork out of creating effective lessons (Haycock, 2010, p. 18)
- Improve students’ mathematical ability (Flick & Kuchey, 2010, p. 55)

**References**
- Testimony to the United States House of Representatives: Testimony to the united states house of representatives: (2010).