

1106-VU-2753

**Umesh P Nagarkatte\*** ([umesh@mec.cuny.edu](mailto:umesh@mec.cuny.edu)), Department of Mathematics, A1/L08E, 1638 Bedford Avenue, Brooklyn, NY 11225, and **Joshua Berenbom**. *Abstract: Adapting the Singapore Model Method of Problem Solving Framework to College Level – Progress Report.*

Singapore Mathematics ranks first in the world in the Trends in International Mathematics and Science (TIMSS) studies. We are revamping Prealgebra to College Algebra adapting the Singapore Mathematics Problem Solving Framework. We also involve the Theory of Constraints (TOC) and Thinking Process tools to prepare a logical list of all difficulties in every topic. This can serve as a checklist for mastery of the topic. It also helps to connect to appropriate KhanAcadmy.org videos. The Framework is represented in a pentagon of interrelated components: Concepts, Skills, Processes, Metacognition, and Attitudes. Integrating the five components addresses diverse learning styles and deeper understanding. Great emphasis is placed on the aspect of learning the concepts numerically, graphically, algebraically and analytically. The key feature of the model method is illustrated in rectangular bars which are pictorial representations of the models applicable to both arithmetic and algebra topics helping students learn the mechanics involved in solving word problems. This concrete-pictorial-abstract approach is depicted by the part-whole and comparison models. In elementary and intermediate algebra geometrical interpretations of topics such as factoring deepen students' understanding. (Received September 16, 2014)