

## VOCABULARY CONCERNS IN THE MASTERY OF MATHEMATICS: COLLEGE ALGEBRA

Richard L. Francis

**1. Introduction.** Careless word choices in describing algebraic processes often stem from lack of understanding. Catch-all terms, confusing equations with expressions, or casual terms, suggesting uneasiness about a proper mathematical description, prove frequent in the classroom. Confused labeling, such as the “general quadratic equation” as opposed to the “quadratic formula,” has an adverse effect on mathematical perspective as well. All in all, such lack of precision in speech proves revealing in terms of organization of thought and coherence in thinking. Obviously, not all difficulties stem from this source. Yet it is a source deserving of some analysis in the quest for a deeper understanding of College Algebra.

**2. A Comparison of Methods.** This focus on precision of speech seeks to identify methods of correcting critical deficiencies of word comprehension that may have an adverse effect on College Algebra mastery. Thus, such a study examines foundational terms from elementary algebra that ultimately must support the dialogue and communication efforts of the more advanced mathematical setting. Resolution techniques focus in particular on writing as a powerful tool of clarification, enhancement of understanding, and a paving of the way for more advanced pursuits.

Two sections of College Algebra permitted a comparative look at the benefits and merits of writing activities in the broad area of vocabulary concerns. An early examination first tested all College Algebra students [7] as to their understanding of basic mathematical words from previous courses [6]. Writing activities provided the vocabulary emphasis in section two but only lecture and discussion approaches were utilized in section one. A late examination, testing students in both sections, permitted a comparison of the two groups. Both sections were of random enrollment and essentially and *collectively* of the same level of mathematical maturity.

**3. Vocabulary Concerns.** Lack of understanding of word meaning may well suggest broader areas of weakness. These in turn identify consequences of a kind that hinders mathematical growth. Select word encounters, so often at odds with precision of speech, prove at first glance quite remarkable because of the exact and quantitative nature of numerical notions.