



Red Bank Professional Development

Focus:

The focus of the professional development is on helping algebra teachers use function concepts, representations, and behaviors to connect and teach content found in Algebra I, Algebra II, and senior remedial algebra, implemented on the TI-84 graphing calculator.

Rationale:

Teaching algebra from a function approach means using function representation and function behaviors to teach content such as factoring, equation solving, arithmetic operations on polynomials, systems of equations, inequalities, properties of inequalities, definitions, concept of asymptotic behavior, absolute value, slope, laws of exponents, etc. Using unique materials, we use function concepts to connect all algebraic concepts, develop understanding of, interest in, and long-term memory of traditional algebraic ideas. Workshop material capitalizes on cognitive processes of associations, pattern building, attention, visualizations, meaning, the enriched teaching environment, distributed learning, and priming. We model how to teach algebra through a function approach with graphing calculators, and demonstrate why they are crucial to teaching and learning.

Presenter Professional Affiliation:

Edward D. Laughbaum
The Ohio State University
Department of Mathematics
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Presenter Qualifications:

Professor Laughbaum has authored over 50 publications in professional journals or by commercial publishers. He has given over 200 presentations at state, national, and international conferences. Ed taught mathematics at the college level for 34 years and 5 years at the high school level. He has won numerous teaching awards and has been active in several professional associations.

Participant Comments:

Our texts have investigation as the basis for learning, and we realized that teachers who had been through your summer Institute were better prepared to handle the investigative nature of the curriculum. It is my feeling that the more teachers who have experiences such as your summer Institute, the better our program implementation will be. Virginia

Two years later, our state scores are still rising. Students are taking Algebra 1 in the eighth grade and my administrators are ecstatic. My district has completely realigned its scope and sequence which now incorporates a function based approach to all of our algebra classes. Ohio

The ideas and methods discussed during the function-based course seem almost revolutionary compared to what is more common practice. This course has shown me how to make solid, real-world connections to mathematics that makes sense. Ohio

The large variety of function applications presented in this course have helped provide me with more meaningful problems and approaches to share with my students. North Carolina

What I most appreciated in this institute was seeing how a course could be entirely organized around a theory of how the brain functions. New York

The content of the course was an eye opener. Virginia

I have been re-energized by this course. I am convinced that the Function Approach to Teaching Algebra is not just another gimmick or quick fix ... Virginia

The emersion into the course not as teachers but rather as students greatly reinforced the functional approach as an instructional methodology not as a collection teaching activities. Maryland

...it was one of the most useful and thought provoking workshops that I have attended. The workshop was elegantly crafted. It has provided me with clarity and direction. Massachusetts

I believe in this [function approach] very much and found my mathematical spirit quite buoyed by your training. Virginia

After taking this two-day workshop, my viewpoint on the teaching of algebra has changed more than I thought it would. Prior to learning about the Functional Approach, I had no idea that algebra could be taught in this manner. More importantly, I had no idea that so much was possible with the graphing calculator. I was unaware of the capabilities of the graphing calculator, especially those applied to an algebra level course. Ohio

This course “pushed the envelope” even more than I had anticipated. I expected to be encouraged with new ways for implementing the graphing calculator into my everyday teaching. Ohio

Audience:

High school algebra teachers and college developmental algebra teachers

Site Requirements/Scheduling:

The local site must provide a classroom, and AV equipment. The site organizer must make all local arrangements. To schedule a 1.5 to 3-day workshop, simply email Professor Laughbaum at ed@redbankpublishing.com to receive more information, or to set dates and location. Each day is 6 contact hours of instruction. An application form is available at www.redbankpublishing.com.

Fees:

\$750 per day plus all travel expenses

Course materials are provided in addition to Texas Instruments TI-84 SE loaner graphing calculators with limited data collection sensors.