An Investigation of Technological Options in Developmental Mathematics

***Selina Vásquez Mireles**, **Thersa Westbrook**, **Debra Ward**, Texas State University-San Marco, and **Cristella R. Diaz**, Northeast Lakeview College*

Selina Vásquez Mireles is a professor in the Department of Mathematics and Director of the Center for Mathematics Readiness at Texas State University–San Marcos. She has created, implemented and evaluated the effectiveness of several models and programs in postsecondary mathematics including FOCUS, a corequisite model.

Thersa Westbrook received her Ph.D. in mathematics education from Texas State University–San Marcos. She is a lecturer/researcher at Texas

The purpose of this paper is to discuss an investigation of the infusion of multiple technology modalities, such as graphing calculators and the Internet, in the developmental mathematics classroom through four topics: systems of linear equations, radical expressions, radical equations, and quadratic equations. Analysis of pre- and post-test scores produced statistically significant results in favor of the treatment group for the quadratic equations lesson. Moreover, with statistical significance, 100% of the students in the treatment group correctly answered the final exam question associated with the radical expressions lesson plan. Overall, students either marginally maintained or benefited from the use of multiple technology modalities. Qualitative evidence supports a technology "no harm" effect through substantial trends of students' perceptions of technology as either calculator usage or required use of textbook-related software.

State University–San Marcos, where she works in the Center for Mathematics Readiness. Her research interests are the performance and achievements of developmental mathematics students in postsecondary education, college and career readiness, and statistics education.

Debra Ward is a doctoral student at Texas State University–San Marcos, where she is studying mathematics education. While her current research is focused on mathematical problem solving and musical training, she continues to investigate the benefits of incorporating technology in the mathematics classroom.

Cristella R. Diaz is an associate professor of mathematics at Northeast Lakeview College with 20 years of postsecondary teaching experience. She is pursuing an Ed.D. at Texas State University–San Marcos in developmental education with emphasis in learning support. Her research interests include mathematics anxiety, self-efficacy, and Hispanic success in mathematics.	