PROMiSE

Partnership to Rejuvenate and Optimize Mathematics and Science Education in Florida

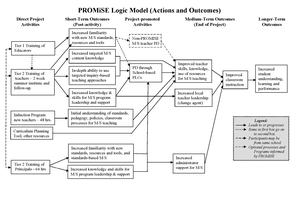
Project Overview

Principal Investigator: Dr. Gladis Kersaint

$22 million — 3 Years (Funded by the U.S. Department of Education — Awarded by the Florida Department of Education)

PROMiSE addresses the need to improve **mathematics and science achievement** of students through **professional development.** PROMiSE is a three-year partnership among:

Three Research Universities	Four Large School Districts	Three Educational Consortia	Others
University of Florida	Duval County	Heartland Educational Consortium	Florida Virtual School
Florida State University	Hillsborough County	North East Florida Educational Consortium	Horizon Research, Inc.
University of South Florida	Miami-Dade County	Panhandle Area Educational Consortium	
	Seminole County		



26 Summer Institutes

13 Mathematics (Audience)

- **Number & Operations** (Teachers of Grades K-5)
  - 2 sessions
- **Rational Number & Proportional Reasoning** (Teachers of Grades 3-8)
  - 4 sessions
- **Geometry & Measurement** (Teachers of Grades 3-8)
  - 2 sessions
- **Algebra** (Middle & High School Teachers)
  - 5 sessions

13 Science (Audience)

- **Matter and Energy** (Teachers of Grades K-8)
  - 5 sessions
- **Force & Motion** (Teachers of Grades 6-12)
  - 4 sessions
- **Scientific Theories** (Teachers of Grades 6-12)
  - 2 sessions
- **Earth/Space Science** (Teachers of Grades 6-8)
  - 2 sessions

PROMiSE PD Model - Immersion: Inquiry into Mathematics or Science

Immersion involves having teachers actually "do" science or mathematics and gain experience of doing mathematics or science with mathematicians and scientists. Teachers are provided opportunities to experience learning mathematics and science from an inquiry perspective. As learners of content, they broaden their own understanding of content that students are expected to learn, deepen their understanding of content beyond expectations for students, make connections among subject matter ideas, and gain an understanding of how the subject matter grows.

Enhancing Teacher Subject Matter Knowledge

PROMiSE is a large-scale partnership effort that engages College of Arts and Sciences (CAS) faculty (mathematicians & scientists), College of Education faculty (mathematics and science teacher educators) and teachers in the design and delivery of professional development for teachers of mathematics and science K-12.

PROMiSE provided 26 two-week regional summer institutes (13 mathematics & 13 science) throughout Florida. The goal of these Institutes is to deepen the content-specific knowledge and skills of teachers of mathematics and science in order for them to effectively deliver the Next Generation Sunshine State Standards (NGSSS) to their students. Each year approximately 1,000 educators will participate in a Summer Institute program to obtain inquiry-based experiences, activities and investigations in mathematics and science subject matter.

Making Classroom Connections: Institute Follow-Up Sessions (4 Days during Academic Year)

Four days of follow-up professional development will be offered during the academic year to teachers who participate in the Summer Institutes (Year 2 and Year 3). These follow-up activities will provide opportunities for teachers to engage in research-based activities that will enable them to connect the mathematics and science content gleaned from the Institutes to useable forms for classroom application.

Indicators of Success

- All Institutes showed a statistically significant gain in teacher content knowledge (see figures 1, 2 and 3 below).
- The project succeeded in its efforts to engage CAS faculty in meaningful ways in the summer institutes. They were prominently featured in leading the sessions observed and, for the most part, interacted well with the participants in their role as content expert.
- Most teachers participating in the focus groups reported that they enjoyed the institutes and felt they were benefiting from attending.
- Teachers in focus groups were especially positive when activities were varied and changed throughout the day and week; hands-on activities were well-received and felt to be the most engaging.
- Overall, the facilitators were effective in creating an appropriate climate for learning in the sessions, and the treatment of the content was generally rated as appropriate.
- The teacher members of the design/delivery teams played important roles in the sessions observed (presenting to the group, facilitating activities, providing support for the participants and other facilitators).
- Most of the sessions observed contained learning activities that engaged participants with the content being studied.

Figure 1: Baseline and post-institute assessment scores, standardized by baseline assessment

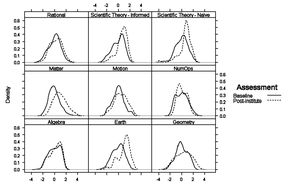


Figure 2: Mean IRT-estimated change and 95 percent confidence intervals, by Institute

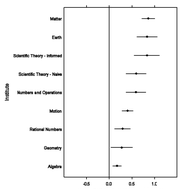


Figure 3: Number and proportion of teachers with a significant increase

Institute	IRT Scores		Raw Scores	
	Number	Percent	Number	Percent
Matter	170	100.0	137	80.6
Motion	130	98.5	61	46.2
Earth	59	100.0	45	76.3
Algebra	16	8.7	73	38.9
Number and Operations	65	95.6	26	38.2
Rational Numbers	71	50.4	67	47.5
Geometry	28	45.9	29	47.5
Scientific Theories: Naive	66	89.2	44	59.5
Scientific Theories: Informed	65	85.5	42	55.3