

## How Louisiana Mathematics is Changing

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### Abstract

LaSIP's leadership role in Louisiana has included intensive professional development of 7,000 teachers and over 400,000 students annually and has led to increases in Louisiana school performance scores. Early data from LEAP 21 and the ITBS on mathematics performances persuaded the LDE to enlist LaSIP staff in establishing a state mathematics task force. The results of this action are noted.

Since 1990, the educational landscape in Louisiana has witnessed an unprecedented transformation. Notable developments include: (1) NSF funding LaSIP (1991- 1996 and 1996- 2001) with intensive professional development programs in mathematics, science, and technology that have impacted 7,000 teachers and up to 400,000 students annually across all 66 school districts, (2) rigorous content standards in all disciplines, (3) standards-based criterion-referenced and norm-referenced tests scheduled to be fully implemented in K-8 by AY 2000-2001 and in grades 9-12 by AY 2002-03, (4) a state technology plan and associated funding for classroom-based technology, (5) a more focused and standards-based textbook adoption process, (6) a rigorous student, school and district accountability system adopted formally by the Board of Elementary and Secondary Education (BESE) in January of 1999 with baseline testing in the spring of 1999 and with the first school performance scores established in the fall of 1999 for school having students in the K-8 grade range, and (7) creation of the PK-16 Blue Ribbon Commission leading to joint actions by the state Board of Regents (BoR) and BESE to systemically reform teacher preparation consistent with congressional mandates and the state's new School and District Accountability System.

Louisiana Department of Education's (LDE) school performance scores (SPS) will ultimately be based largely on multi-year performances and growth in both Louisiana

Education Assessment Program (LEAP) and Iowa Test of Basic Skills (ITBS) test results in ELA, Math, Science and Social Studies. The LEAP for the 21<sup>st</sup> Century (LEAP 21) counts for 60% of the SPS and ITBS for 30% with the remaining 10% based on school attendance and dropout rates.

A guiding premise for LaSIP is that student accountability in relation to performance depends directly on teacher content knowledge and classroom performance. Eighty-one percent of LaSIP mathematics and science professional development projects have included teachers of grades 3, 4, 7, or 8 -- with 4 and 8 targeted under the state's new student Accountability System. In spring 2000, scores on the LEAP 21, the state's criterion referenced test (CRT), became "high stakes" for students. Fourth and eighth grade students who scored "unsatisfactory" on mathematics or ELA tests were expected to attend summer school and retake the test. Unless the student scores above "unsatisfactory" he/she cannot be promoted.

Mr. Cecil Picard, State Superintendent of Education, in the letter dated November 25, 1998, provided context for these unfolding events, highlighting LaSIP's leadership role in Louisiana education reform since its inception in 1991: "Our recent reform efforts have their strategic foundation in the concepts of standards-based and systemic reform within a comprehensive school and accountability system. In part or whole, these concepts were originally conceived and advanced through the Louisiana Systemic Initiatives Programs."

Early data from LEAP 21 and the ITBS on mathematics performance persuaded LDE assistant Superintendent Billy Crawford to enlist LaSIP staff in establishing a state mathematics task force. Beginning in October 1998 the task force worked to develop a

special mathematics leadership program, *Developing Educational Excellence and Proficiency (DEEP) in Mathematics*, targeted at grades 3-8 in AY 1999-2000. In summer 2000, the program broadened its scope to include mathematics at grades K-8 as well as *DEEP in Science* at grades K-8.

The DEEP in Math program involved careful selection and training of DEEP leaders in 1999 who were then employed full-time by an LEA to work with all math teachers in one or few school at some cohesive set of grade levels K-8. A study of all targeted DEEP Schools with 4<sup>th</sup> or 8<sup>th</sup> grade students and 1999 school performance scores under 60 (10 or more points below the state average) is promising. There were 8 such schools at the 4<sup>th</sup> grade level and 10 at the 8<sup>th</sup> grade level. These schools had an average of about 125 students at a given grade level. Comparing two-year LEAP math score improvements from spring 1999 to spring 2001 shows that at each of the two grade levels the average school improvement in percentages of students scoring “basic or above” for these schools was just over 20 points, from a little over 20% in the base year 1999 to over 40% in 2001. Average school “unsatisfactory” percentages dropped from almost 60% to under 30% at the 4<sup>th</sup> level and from 52% to 33% at he 8<sup>th</sup> grade level. In three of the four categories, the average improvements were more than twice the overall state spring 1999 to spring 2001 improvements.

State appropriations and legislation reflect the high priority assigned to K-12 reform in Louisiana. New state allocations since 1996 have included teacher salary increases, free college tuition for better students through the Tuition Opportunity Programs for Students (TOPS) scholarships, new funding for the BoR-sponsored Center for Innovative Teaching and Learning, and funding for Blue Ribbon Commission PK-16

activities, among many initiatives. An additional upscaled area includes technology. Since 1998, the Louisiana legislature has allocated support for LDE's Louisiana Center for Educational Technology Literacy Challenge fund and other sources.

LaSIP and the state of Louisiana continue to advance by implementing a theory of reform that maintains that effective PK-16 collaborations are essential to building a statewide infrastructure to sustain systemic reform leading to higher levels of students achievement. In the early spring of 2001, LDE created an umbrella organization, LINCIS (Learning –Intensive Networking Communities for Success), to help LDE, LaSIP and school systems coordinate teacher professional development activities.

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