Linking Teacher and Study Learning to Improve Professional Development in Systemic Reform

Barry J. Fishman, Ronald W. Marx, Stephen Best, Revital T. Tal

The continuing education of our nation’s teaching force is crucial to the development of student knowledge. The professional development programs by which teacher’s continue their education, however, have undergone little scrutiny regarding the effectiveness of their design and implementation. The focus of this article is a proposed framework by which professional development programs may be scrutinized for effectiveness.

In support of their proposed framework for evaluating professional development programs, the authors conducted a study to test the effectiveness of the framework. The study involved fourteen schools from the Detroit Public School system, selected by the researchers and school district personnel. From each of these fourteen schools, one to three science teachers of sixth, seventh, and eighth graders participated. The study tested the evaluation framework by taking qualitative and quantitative measurements of a science watershed unit implemented in a professional development program. The primary goal was to measure student achievement in the unit and to evaluate the effectiveness of professional development programs in altering achievement levels for the future. What follows is an overview of the proposed framework for professional development evaluation and of the supporting study’s conclusions.

The framework for evaluating professional development centers on the progression of knowledge with regards to a linkage between teacher and student learning. Measuring teacher learning, as denoted by “changes in the knowledge, beliefs, and attitudes of the teachers that lead to the acquisition of new skills,” is difficult. As a result, teacher “knowledge, beliefs, and attitudes” is the focal point of the proposed framework.

While the framework centers on teachers’ knowledge, beliefs, and attitudes, there are several additional factors that offer significant influence. Student performance is viewed as a significant contributor to teachers’ knowledge, beliefs, and attitudes. This feedback often influences the classroom learning that occurs for teachers as they make decisions regarding curriculum as well as the decisions made regarding professional development material. It should be noted as well that the actual curriculum used in the classrooms is viewed as a source of influence on teachers’ knowledge, beliefs, and attitudes and also as a source of professional development itself. One final influence on teachers’ knowledge, beliefs, and attitudes are the design elements of the professional development program. These include: the content of the professional development, the strategies employed, the site for professional development, and the media used in presentation of the program.

As noted earlier, the primary focus of the study outlined in this article was to test the effectiveness of a proposed framework for professional development programs. After selecting appropriate samples and implementing the science watershed unit through a professional development program, the researchers began the evaluation of their data. Data sources included pre-test and post-test scores related to the watershed unit, teacher evaluations of the professional development program, and observations of classroom enactment with the knowledge implemented in the development program. Ex post facto data analysis of the watershed unit test scores from prior years showed little improvement in student understanding of the material. Upon the implementation of the proposed professional development training for teachers regarding the watershed unit, however, data analysis shows statistically significant improvements (p<.001) over the previous year.

Concluding discussion centers on the idea that once student difficulties were identified with a particular subject, the proposed framework for professional development offered changes in professional development activities for teachers, thereby preparing them to better instruct the students. The re-design of professional development had a “positive impact on teachers’ knowledge and beliefs about their teaching, and also on their classroom enactment.”

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SUCCEED Program, NC State University, Box 7801, Raleigh NC 27695-7801