

TREISMAN-STYLE SUPPLEMENTAL INSTRUCTION IN LOWER DIVISION CHEMISTRY COURSES AT NEW MEXICO STATE UNIVERSITY—AN INTERVENTION THAT WORKS!!!!

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Supplemental instruction (SI) has become a nationally recognized academic support program for students under-prepared to perform university level study. SI focuses on teaching students learning strategies in order to excel in “high-risk” courses in which high percentages of students typically fail. Lower division chemistry courses are typically problematic for students to master. At New Mexico State University, Las Cruces, the failure ratios (grade of D, F, W, or I) for students in introductory chemistry were 55% for first semester (CHEM 111) and 46% for second semester (CHEM 112); in organic chemistry, these ratios were 70% (CHEM 313) and 43% (CHEM 314), prior to intervention by SI. SI was instituted as a voluntary activity at NMSU in all sections of these two-semester course sequences in January 2001. SI utilizes specially-trained, student peers as facilitators of learning activities in regularly scheduled, weekly workshops.. After five semesters from Spring Semester 2001 through Spring Semester 2003, SI reduced the failure ratio of students (i) 17 percentage points in CHEM 111; (ii) 23 percentage points in CHEM 112; (iii) 40 percentage points in CHEM 313; (iv) 27 percentage points in CHEM 314; and, (v) significantly reduced the disparities in performances between under-represented minority students and non-minority students. Thus, application of the principles of Supplemental Instruction, as originally constructed for calculus students in mathematics by Treisman at the University of California, Berkely, can be applied to chemical disciplines as well, with significant improvements in student performances. It is estimated that over 300 students at NMSU, who predictably would have failed without SI, have learned how to achieve a passing grade (A, B, C) in these chemistry courses through participation in SI workshops. This poster will also describe the organization of SI at NMSU. Supported by NIH grant no. GM61222-29 and CDC grant no. U10/CCU 619259-03.