

## Not Your Ordinary Supplemental Instruction: A Focus on Metacognition

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### Author Biograph

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In order to improve student retention, progression and graduation at Augusta University, a new course was designed to supplement Principles of Chemistry II (CHEM 1212). The novel course was atypical for Supplemental Instruction (SI) which has been around since 1976 and generally involves students voluntarily attending a help session led by an SI supervisor, the course instructor, or often, an undergraduate student who successfully completed the course.

The supplemental course (CHEM 1950) is a one-credit, one-hour per week course taught by a faculty member currently teaching CHEM 1212. Students register for CHEM 1950 and receive a letter grade based on their performance on course activities and assessments. Students who are at risk for earning a D, F or W in CHEM 1212 are recruited for the class. Risk is primarily determined by a grade of C in the pre-requisite course and/or a failing score on a test given on the first day of class in CHEM 1212. The supplemental course is structured such that students who attend class, participate in class activities, and complete assignments with reasonable success will earn at least a C in the supplemental course. Traditionally, two sections of the course are offered each semester with section enrollment limited to 28 students.

### Goal of Core Activities

peers and solicit help from the instructor when needed. The smaller class size ~~stake~~ aspect of the course seemed to create a relaxed environment where students freely discussed course topics without fear of judgement from others. To further lower ~~anxiety~~ arising from asking questions in front of their peers, students submitted anonymous ~~handwritten~~ questions to the instructor before class. These questions were addressed at the start of class and often ignited an engaging question and answer ~~session~~ on confusing problems on pre-class quizzes, tests (in the main course) or homework problems. After this initial Q and A session, students were assigned to small groups (3 or 4 students) for ~~problem~~ exercises designed to assist students in ~~clarifying~~ concepts they did not understand. During this time, the instructor moved around the classroom, answering questions and providing answers to the assigned problems with appropriate feedback. The instructor consistently praised the students for ~~efforts~~ and their understanding of difficult concepts. These aforementioned strategies were implemented in order to improve confidence and metacognition.

To further promote metacognition, students were asked to read Kenneth Sukka's book ~~The On Game: Nine Steps to Better Grades~~. Sukka's book is a quick, easy read that provides students with simple solutions for nine common mistakes college students make that hinder their success. In addition, the book highlights effective study strategies ~~and~~ best practices for success. After reading excerpts from the book, students completed reflections requiring an evaluation of their own study practices, test performance(s) and thoughts on the effectiveness of study techniques (their former practices ~~and~~ techniques they implemented based on readings).

### Reflection

Students were asked to rate aspects of the course on a scale with 4 being very helpful and 1 being not very helpful. Students rated lecturing by the instructor and test review ~~groups~~ during class as being very helpful (Table 1). Students ~~rated~~ working practice problems in groups as helpful. According to the students, less helpful aspects of the course were reading and reflecting ~~on~~ ~~The On Game: Nine Steps to Better Grades~~.

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Class Activity	Average score*
Lecturing by instructor	3.92

