ITeach 2010
Conversations on Teaching

Sponsored by Arts & Sciences, The Teaching Center, The University Libraries, and The Office of the Provost
ITeach 2010: Conversations on Teaching

8:45-4:45  Registration and Information
          Coat-Rack; Coffee and Water

9:15-10:30 Plenary

10:30-11:30 Sessions in Seigle Hall (room #s on your schedule)
11:30-12:30

12:30-1:30 Lunch in 204 and 306 Seigle Hall

1:30-2:30 Sessions in Seigle Hall (room #s on your schedule)
2:30-3:30

3:30-4:30 Reception: 2nd floor lobby, Seigle Hall
Improving Teaching by Applying Research on Learning

Gina Frey, Kathy Miller, and Mark McDaniel
Opening Up the Conversation

Collaboration To Improve Student Learning

Faculty in the Discipline

Faculty Performing Research on Learning
Bridging The Gap

Knowledge about how people learn

Specific learning & teaching challenges in the classroom

Faculty in the Discipline

Faculty Performing Research on Learning
Collaborative Project in General Chemistry

Mark McDaniel, Shawn Shields, Chris Kudelka, Kit Mao, and Gina Frey

Departments of Psychology and Chemistry
General Chemistry: Selected Goals

Goals for Student Learning

- Solve problems creatively
- Integrate, apply, and connect concepts across disciplines

Study Skills

- Promote complex problem solving
- Apply concepts in different contexts
General Chemistry: Types of Student Learning Approaches

Algorithmic (Exemplar)
- Memorizes information
- Follows procedures

Conceptual-based (Rule-based)
- Connects concepts to problem solving
- Integrates ideas together
Objectives of Project

- Identify learning approaches
- Compare performances of students
- Develop supplemental instructional methods
This fall (2009), 663 Students were invited to take the McDaniel Function Learning Test

Test conditions: web-based exam, unsupervised testing, approximately 45 minutes

373 students attempted the test
  - 192 students: invalid test results (non-learners or students who sped through the exam without effort)
  - 181 students: valid test results (27% of the class)
To inquire about results, please contact Gina Frey at gfrey@wustl.edu.
This spring, compare Algorithmic learners to Conceptual-based learners in

- Final grades in general chemistry lecture
- Final exam in general chemistry laboratory and cumulative lab report score in general chemistry laboratory
- Algorithmic and conceptual exam problems in general chemistry lecture
Chemistry faculty observed 2 learning approaches in classroom

Collaboration
Better understanding of student learning

McDaniel studying learning approaches in laboratory

Data confirm observation
Lab test works in classroom

The Teaching Center, Washington 1/14/10