Structured Learning Assistance, Group & Inquiry-Based Pedagogies Work

Faculty and senior undergraduate students have teamed together to improve students learning in gateway, introductory science and math classes. Supported by STREAMS Course Development Grants and funding for Structured Learning Assistance (SLA) delivered by Peer Learning Assistants (PALs), the 449 students enrolled in Biology 121, Chemistry 141, Math 161, Physics 243 and Physics 244 this fall earned 58 more A and B grades and 63 fewer D, F, W and I grades than would be expected given the typical rates for students in those courses based on previous years.

These courses were chosen for support because each had a rate of D, F, W, or I grades above 30% (and sometimes above 40%) most every year for at least the past five years. For the two years before SLA was introduced, Biology 121, Chemistry 141, Math 151 or 161, Physics 243 & 244 had a cumulative DFWI rate of 36.7% and an AB rate of 41.2%.

All courses saw reductions in DFWI and increases in AB rates, with statistically significant changes (at p<0.05) in Biol 121, Chem 141, Math 161, and Phys 244. Overall, the rate of DFWI in all courses was reduced from 36.7% to 23.2%, and the AB rate rose from 41.2% to 54.1%, which were both significant at the p = .000 level. Figure 1 shows the decreases in DFWI rates (below) while Figure 2 (reverse side) shows AB rate increases.

Thinking about this from a student success perspective, 63 fewer D, F, W, or I grades earned and 58 additional A or B grades earned in fall 2011 means a significant number of people benefited personally from these efforts.

The total cost of the SLA / PAL program for the fall semester was $21,580, meaning that the cost of preventing each D, F, W, or I grade was about $360. That’s assuming that the increased A & B grades were free.

More STREAMS Activities

- Recruitment for fall 2012 semester PALs is underway. Please encourage students to apply for PAL positions in biology, chemistry, computer science, calculus, pre-calculus and physics.
- Summer Bridge 2012 is now recruiting incoming first-year science and math majors to participate. We’re also looking for faculty and student researchers to support the program.
- The 2012-2013 residential learning community will be supported by a one-credit course for the first time taken by all first year LC science and math majors.

DFWI rates before and after changes in pedagogy and SLA, all statistically significant except Physics 243.
We honor the students and faculty whose efforts led to increases in student success this fall. Their hard work started so many students on a good path.

Fall 2011 PALs: Alex Baribeau, Natalie Bennoch, Melissa Brulotte, Michelle Chrisman, Jennifer Conway, Matthew Gagne, Chris Goncalo, Erkan Gul Turk, Chelsea Hedderig, Valerie Ivancic, Matthew Keogh, Kevin McElwee, Kyle Murphy, Alberto Ocampo, Katelyn Olsen, Mike Pollino, Jordan Shadbourn, Jeff Sousa, Ryan Stephansky, Emily Taylor, Abbie Woodward

Spring 2012 PALs: Matthew Ahrens, Christine Aloia, Natalie Bennoch, Melissa Brulotte, Patrick Connelly, Nicholas Faria, Erkan Gulturk, Haylie Hancock, Valerie Ivancic, Matthew Keogh, Kevin McElwee, Kyle Murphy, Michael Pollino, Melissa Radevicz, Jordan Shadbourn, Greg Tanny, Emily Taylor, Alex Valeri, Abbie Woodward

Resident Mentors (Learning Community): Kyle Murphy & Tyler Holloway
Resident Programming Assistants (Learning Community): Catherine Bukis & Brandon Ackley
Resident Assistants (Learning Community): Silviane DaConceicao & Juan De Leon

SPIDERs: (Peer Mentors): David Denny, Kevin McElwee, Hailey Bussey, Cole Belanger, Chelsea Hedderig, Ashley Baldo, Matthew Boudreau, Joseph Matta

Fall 2011 Faculty teaching courses with SLA: Dr. Jennifer Mendell (Biology), Dr. Jeffrey Bowen (Biology), Dr. Ed Brush (Chemistry), Dr. Tammy King (Chemistry), Dr. John Santore (Computer Science), Dr. Irina Seceleanu (Calculus), Dr. Shannon Lockard (Calculus), Dr. Hang-Ling Chang (Calculus), Dr. Uma Shama (Calculus), Dr. Jeff Williams (Physics), Dr. Joseph Hernandez (Physics), Dr. Thomas Kling (Physics)

Spring 2012 Faculty teaching courses with SLA: Dr. Tammy King (Chemistry), Dr. Chifuru Noda (Chemistry), Dr. Ed Brush (Chemistry), Dr. Steve Haefner (Chemistry), Dr. Chadi El Kari (Computer Science), Dr. Seikyung Jung (Computer Science), Dr. Timothy Mitchell (Calculus), Dr. Michael Leen (Calculus), Dr. Irina Seceleanu (Calculus), Dr. Uma Shama (Calculus), Dr. Jeff Williams (Physics), Dr. Joseph Hernandez (Physics), Dr. Thomas Kling (Physics)

STREAMS Graduate Assistant: Hannah Loynd

PAL Training: Dorie AuCoin (Academic Achievement Center)

STREAMS Curriculum Team: Dr. Thomas Kling (Physics), Dr. Matthew Salomone (Mathematics), & Dr. Ann Brunjes (Director of the Office of Teaching and Learning)

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