PROJECT #1: GROUP EXAMS

Project title: Group Exams and EAL Student Performance
Grant recipient: Marion Caldecott, Department of Linguistics
Project team: Esma Emmioglu and Kayleigh MacMillan, research assistants
Student numbers: 29

Motivation for project
Linguistics has the second highest percentage of EAL students at SFU. I have observed that some EAL students sometimes struggle with the types of answers that are expected of them, are often reluctant to ask clarifying questions and hesitate to come to office hours. As a result, such students do poorly on assignments. I have also observed that all students, but especially the EAL students perform above my expectations on a group presentation task at the end of the semester. Most students are extremely engaged with the material, meaning they appear to understand it well (they can explain it to the class) and have spent a lot of time preparing their presentations. The differences in student attitudes and results are striking. As a result of this observation, I would like to explore how I can use groups earlier in the semester to support students, in particular EAL students.

Approach to be investigated
Students in my phonetics class will individually write 10 quizzes, 1 midterm and 1 final exam. Immediately after the quizzes/exams, they will assemble in their pre-determined groups and complete the same quiz/exam. Each group may submit only one quiz/exam. The individual portion of the grade will be worth 85%, while the group portion will constitute the remainder. Students will not do worse on the group portion than the individual portion (they will receive their individual grade).

Research questions
• Does students’ performance on a subset of questions improve over the course of the semester?
• Is there a difference in performance between EAL and English L1s?
• Which aspect of group exams did students find most helpful? Which hypothesized aspect of learning did they support?
• Did student attitudes towards group exams change over the semester?
• Was there a difference between EAL and non-EAL students in attitude at the end of the semester?

Selected findings
• Improvement of student performance was statistically significant on a subset of questions.
• No significant difference in performance between EAL and English L1 students.
• The aspect of group exams students found most helpful was peer support.
• Improvement of student attitudes toward group exams significantly changed (in positive direction) over the semester.
• No significant difference between attitudes toward group exams of EAL and English L1 students at the beginning of end of the semester.
PROJECT #2: INSTRUCTIONAL VIDEOS IN CHEMISTRY LABS

Project title: Development of Instructional Videos to Improve Students’ Techniques in General Chemistry Laboratory Courses
Grant recipient: Sophie Lavieri, Department of Chemistry
Student numbers: 204

Motivation for project
When students come to our chemistry labs, they are expected to follow the procedures outlined in the lab manuals in order to complete their experiments. Although the students get a short introductory lecture from the Lab Instructors and/or their TAs about the techniques to follow in order to achieve their goals, I have noticed that several students still have difficulty, either because they (or their TA’s) English proficiency is inadequate (which limits their understanding), or some details are skipped in the TA explanation or the student forgets some details etc. This might affect greatly their experimental results.

Approach to be investigated
I propose developing some videos related to the experiment the students will perform in the Chem 121 lab. Having the opportunity to watch the experiment in advance of their lab session and observe some of the related techniques will not only give them extra time to work on their experiment by reducing the introductory lecture, but will also give them a better understanding about the experiment they’ll perform. Having the opportunity to watch in advance of their experiment how to handle the different equipment will familiarize the general chemistry students with the experiment they will perform in the lab, and will therefore contribute with a better performance.

Research question
• Do students perform laboratory procedures accurately (Pipetting, Titration, Weighting) after watching instructional videos based on observational checklists?

Selected findings
• Students performed all procedures correctly 90% of the time or greater – higher than in previous semesters.
PROJECT #3: PHOTOVOICE ESSAYS IN HEALTH SCIENCES

Project title: PhotoVoice Essays on the Social Determinants of Health
Grant recipients: Maya Gislason & Rodney Hunt, Faculty of Health Sciences, and Barb Berry, Teaching and Learning Centre
Project team: Jemma Tosh, research assistant
Student numbers: 54

Motivation for project
Undergraduate students in the Faculty of Health Sciences are required to take HSCI 340, The Social Determinants of Health, which includes both BA and BSc students in their third year. Some of these students arrive without background knowledge of how social life influences individual and population health. As a result, they can find it challenging when material uses a social model of health to address linkages between the structural organization of society and population health outcomes. In particular, we are interested in (a) demonstrating the relevance of a social model of health to public health policies and practice; (b) building student’s capacities to think critically and synthetically at the intersection of a range of health determinants; and, (c) offering an opportunity for students to engage both intellectually and experientially with social theories of health and illness so that they can more effectively evaluate the role health theories can play in their future education and practice.

Approach to be investigated
To promote learning regarding the social determinants of health, we are integrating a PhotoVoice project into the course. PhotoVoice is a method of analysis which uses photography to represent and express points of view and lived realities and has been used by educators in similar areas of study. This project will link with existing course material. Students will work together in groups on one of the major themes within the course. They will take photographs in and around the Vancouver area to illustrate their theme and its relevance to the social determinants of health with captions and essays in both individual and group assignments. Students will choose photographs and text to produce a poster, which will be showcased in a session at the end of the course.

Selected research questions
• Will the PhotoVoice assignments be effective in encouraging student appreciation of the social determinants of health? (intersecting biophysical, environmental, and social factors)
• What are student perceptions of the effectiveness of the PhotoVoice assignment? What suggestions for improvement do they have?

Selected findings
• 38% of students (n=5) said they learned more about the social determinants of health through the PhotoVoice approach than through traditional methods; 54% (n=7) said they learned about the same amount; 8% (n=1) said they learned less.
• Given experience and student feedback, will make the following changes:
  o Make the PhotoVoice assignments worth less of the total course grade, but also provide more rigorous evaluation criteria
  o Make clear distinctions between individual and group PhotoVoice projects as well as clarity around the relationships between them to support iterative learning and knowledge synthesis.
PROJECT #4: MARKETING DECISIONS SIMULATION GAME IN MBA COURSE

Project title: Using a Marketing Decision Simulation Game in MBA Marketing Courses: Effects of Group Behavior on Group and Individual Performance  
Grant recipient: Leyland Pitt, Beedie School of Business  
Project team: Karen Robson and Adam Mills, research assistants  
Student numbers: 73

Motivation for project
Many courses taught at universities require students to work in groups on a wide array of projects and assignments that then form part of their final grades. At a simple level, a student’s final grade is therefore dependent on the abilities, work and contribution of her/his peers, so that students care about the quality of the interaction they have with group members. Simultaneously, instructors assign group work because of the fact that most students will interact with others, many of whom they might ideally not voluntarily choose to work with, on entering the job market. So, learning to work well in groups is a critical life skill. The quality of their work individually, and for the organization they work for, will also be affected by the quality of interaction they have with group members.

Approach to be investigated
Computerized simulations are a feature of the marketing courses. Students in groups of 4 or 5 take the roles of marketing decision makers in running the marketing aspects of a fictitious firm. Groups compete against other groups in the class in a situation in which a computer simulates a relatively long period of business activity (2 to 3 years) in a relatively short time (8 to 10 classes). Group inputs are the independent variables in a simulation. Outcomes are quantitative performance variables in the firm (e.g. cumulative profit, growth, market share, and customer satisfaction). Students are allowed to choose their own groups and performance in the simulations accounts for 20% of their grades. The main advantage of these simulations is that students can experience the effects of real world decisions in a realistic environment without taking actual financial or material risks.

Selected research questions
• How does group cohesiveness predict performance?
• How do social-emotional behavior and solution satisfaction within a group predict performance?

Selected findings
• 13 groups across two courses participated in the simulations. All but three teams increased in group cohesiveness (as measured by the Seashore index) over time.
• Data trends indicated that there might be a positive relationship between group cohesiveness and performance, but sample sizes were too small to show significance. This possible relationship was stronger in one of the two classes.
• There also seems to be a positive relationship between time spent in the simulation and performance overall, although the top team in one course, actually spent less time in the simulation than other teams.