FOCUSSING ON LEARNING PROCESSES IN HEALTH SCIENCE
— Craig Engstrom

University: University of Queensland
Faculty: Faculty of Health Sciences
Subject: Biophysical foundations of human movement (HMST1900)
Coordinator: Craig Engstrom (craig@hms.uq.edu.au)
Size: 350 students (approx. in Semester 1)
Year: 2001

The following case study is based on an interview with the course coordinator of HMST1900, Craig Engstrom, as well as information derived from course materials. The course deliberately encourages students to work interactively throughout the semester through the use of web-based materials such as bulletin boards, quizzes etc. and lab sessions that require students to cooperate in collecting and understanding course-related data.

Students in HMST1900 are given plenty of support throughout semester. In addition to having 5 contact hours per week (lectures and labs), students are able to attend around 4 Peer Assisted Study Sessions (PASS) to obtain assistance with the statistical component of the course. A brief overview of HMST1900 will be followed by a detailed description of how the assessment tasks are built into the learning process to encourage higher-level thinking.

Overview

HMST1900 is an introductory course focusing on the biophysical foundations of human movement taken by first-year students from a variety of degrees including BScApp, BSc, BA and BEng. Course material is covered using large class lectures, web-based resources (including practice exams), readings from the recommended text and laboratory sessions incorporating problem-based approaches. The web-based resources (available through WebCT) serve to supplement lecture material and are also useful administratively as they allow students to sign-up for labs and to ask and answer questions on the course bulletin board.

A team of 6 lecturers, including the Head of School, delivers a total of 36 lectures over the semester. All students are strongly encouraged to attend the three 1-hour lectures per week. Lectures are structured to allow students to take notes as well as ask and answer questions and involve both whole class and small group activities (including small group discussions). Printed handouts of lecture OHTs and notes are available from the WebCT page.

Laboratories are 2-hour sessions run 7-8 times per semester with approximately 25-30 students per group. They use a task-based approach to facilitate individual and group learning and to foster the use of reading material and group discussion. Attendance at laboratory sessions is compulsory and attendance records are kept for grading purposes (students not attending all lab sessions, without satisfactory documentation, do not receive a passing grade).

A lab-coordinator with a background in Human Movement Studies has been employed to assist tutors and students with lab and fieldwork coordination and inquiries. This supports the lecturers and tutors in allowing them to concentrate on their teaching, and enables students to obtain support and assistance when required.
Lab reports
Students are required to submit 4 written reports from the laboratory sessions. Students conduct, under the supervision of tutors, their own data collection across a variety of topic areas such as anthropology, gait analysis, aerobic capacity etc. within the labs. The sessions are designed to maximise students opportunities to be both the experimenter and experimentee to familiarise them with common field and experimental techniques and apparatus used in human movement studies. Students enter their own personal or group data into custom-designed web-based data sheets in their own time after each lab. The pooled data is then used in writing up their individual reports and in a series of integrated statistics lectures.

Students work in small groups to complete the data collection and write-up, but must hand in individual pieces of work. Each lab report write-up is based around a series of written questions that require the student to integrate material from the lectures, textbook and from readings sourced from the libraries. Tutors are encouraged to have student-led discussions of the lab content at the end of each session. Each written report constitutes 5% of the final grade. Written reports submitted late are penalised 1% per day. Students must hand in late written reports, completed in a satisfactory manner, to fulfil the pass requirements of the course.

Encouraging awareness of learning processes
First and foremost, the objectives are made explicit to students and include the development of skills such as problem-solving, decision-making, communication and thinking analytically. Lab reports are one of the ways these learning goals are achieved through collaboration with others and the use of open-ended problems. However, the two examinations (mid- and end-of-semester) have also been designed to encourage higher-order thinking in students.

Exams are multiple-choice which, although easier to mark and faster for providing feedback to students, require careful planning and regular revision. Furthermore, multiple-choice questions are harder than essay-style questions to develop in ways that encourage sophisticated thinking. However, with the help of an academic developer the course coordinator has recently reviewed and redesigned exam questions in order to promote analysis and understanding of information in addition to recall of specific facts. This process involved a series of meetings between the course coordinator, the academic developer and the lecturing team whereby the goals, objectives and content of the course were specifically mapped onto the examination material. Multiple choice questions were developed and reviewed, both within and across the major sections of the course, based on quantitative analysis (eg. discrimination index, difficulty factor analyses) of results from previous examinations. Subsequent to this all lecturers involved in the delivery of HMST1900 receive feedback on their MCQ results to guide future teaching and refinement of examination material.

Other strategies used to promote quality learning
The lecturing team ensures that quality teaching and learning occurs in lectures by conducting informal and formal peer reviews whereby senior staff in the School of Human Movement Studies audit lectures and write a 1 page report on their colleague.

In addition, the course coordinator attends all lecture sessions and discusses, on an informal basis, specific teaching and learning issues throughout the course. The attendance at all lectures by the course coordinator provides for the students an integration of the material across the various sections of the course and continuity whereby students have a constant contact at all lectures in addition to opportunities to meet with the coordinator during office or arranged times. This process allows lecturers (and students) to provide positive and constructive feedback on a regular basis.

Finally, in 2002 the team plans to enlist 3rd and 4th year students, under the supervision of tutors, to monitor and assist with group work in laboratory sessions. These advanced level students may elect, as part of their formal 3rd or 4th year practicum requirements, to be involved in
demonstrating to and assisting students with the techniques and procedures introduced in the HMST1900 labs.

Conclusion
HMST1900 is one of a suite of first year courses which focuses on foundational material in the field of Human Movement Studies to provide students with a firm grounding for subsequent years as well as providing students with a general interest in the area and a broad introduction to human movement studies. The teaching staff are enthusiastic toward their teaching and content area and are committed to ensuring a high-quality learning environment (again, this is reflected in informal and formal feedback from students). Continuing initiatives, such as the involvement of upper level undergraduates to help with the learning processes in the labs and web-based developments, will be developed and refined to further promote student learning in HMST1900.