Midterm Course Adjustments: Summary of ISW CoP gathering, Oct 28th 2013.

Thanks to Kerry Knox, Spring Gillard and Francis Jones for facilitating, and participants for input and feedback.

Also online, including two pages of examples, at http://eos.ubc.ca/research/cwsei/eossei-times/EOSSEITimes_6.08-midcourse-adj.pdf .

What are midterm course adjustments – why and how to make such changes?

Mid-course adjustments are minor changes that either (a) instructors (and/or TAs) can make midway through a course, OR (b) students can make to their studying, classroom or lab behavior. Visibly involving students in the course by seeking their opinions and acting on them is empowering and motivating for them. KEY TIP: Avoid making substantial changes after the culture of the course has been established. Adjustments should be based on **evidence** or **feedback**. Here are some common purposes of collecting evidence to support a mid-course adjustment along with examples of associated questions:

Purpose of collecting evidence/feedback to support a mid-course adjustment	Examples of questions to ask students Precision in questioning is one key for success. See also a 2-page summary from 2009[i].
To inform revisions to, or fine tuning of, new (or old) in-class activities or modules.	- Concept sketching is ___ because ___. (Replace "concept sketching" with any item you want feedback on.) - Today's worksheet activity helped improve my ability to work with '*concept xyz*'. (5-pt Likert[ii] question).
To determine which concepts or course components students find confusing or puzzling.	- What 1 or 2 topics would you MOST like to discuss (or have practice questions posted) before the midterm? - In the last *n* classes, what was one thing are you either puzzled by ... or intrigued by ...? - The aspect of this class that has been the MOST challenging for me: ... (please be as specific as possible)
To determine whether some aspect of logistics or pacing could be improved. Also to identify teaching practices in the course that you need to explain or clarify.	- What is one aspect of how this course is run that you would like adjusted? Why? - Complete: 1. One thing I would keep is __ because __. 2. One think I would change is __ because __. - Complete the following: Our use of "name-sticks" to randomly call on students is __ because __. - Since we began, the overall pace of this course has been … (Use 5-pt scale; share results with students & colleagues.) - Ask if course components (class, lab, etc.) appear to be aligned (an area of frequent difficulties that can be fixed).
To check whether students correctly recognize the main points of class/module.	- The main point of today's class was ... - One thing I was puzzled / confused / unsure of is …
To assess the effectiveness of teams, groups or peer-based activities and assessments. Many options exist (eg. see team-based learning[iii]). Two possibilities are … →	- For each team member (could be anonymous or not): "Something I appreciate about colleague 'a' is __", and "something I would like to request of colleague 'a' is __". (This could be done in 'real time' as a group activity.) - Identify each team member AND yourself as 'a', 'b', 'c', etc., and rank contributions of each to team work on the following 5-point scale: inadequate, below expectations, adequate, above expectations, exceptional.
To determine if workloads are appropriate.	- Roughly how long in minutes did you spend preparing for and completing this particular assignment? (Add this to the end of an assignment, project or lab.) - Compared to another class you are taking (specify), do you spend much more, more, same, less, much less time on OUR course? Repeat for all other courses you are taking. (Such "relative workloads" [iv] information can be very interesting!)
To measure learning to inform your practice.	- Ideally use a validated instrument (*eg.* concept inventory or attitude survey), but if there is none try anyway!
To find out how students are studying or practicing so that you can offer appropriate advice/incentives to build metacognitive, self-direction or study skills. Also to provide students with the opportunity to reflect on their own progress.	- How often do you do the readings? (Could be multiple-choice.) - The readings prepared me for the lectures and problem-sets. (Eg. using a Likert[ii] scale.) - I find the worksheets provided during lecture helpful to my learning (agree/disagree). This is a SALG-like question[v]. Recall students don't always know what "helps" them "learn", so treat feedback with respectful skepticism. For example, an activity which students found "frustrating" <u>might</u> be good 'deliberate practice' that results in learning. - What are your top 2 preferred study strategies for this course? (Show resulting strategies in order of frequency and use this to advise or "teach" more appropriate strategies for learning, e.g. use of study groups, etc.) - Critical Incidence Questions (Brookfield, 1995[vi]); see Harris & Steyn 2008[vi] for specific questions.

Tips for collecting and managing feedback that informs midterm adjustments

Always show or say something about the feedback or observations soon after they were collected (for example in the next class or via email). Demonstrating honest attempts to act in students' interests based on their feedback may be one of the easiest ways to improve your course evaluation scores[vii].

1) Collecting feedback midway through a course.
   a) Only ask questions that can produce actionable ideas. Save more general questions for end-of-year feedback.
   b) Add questions to existing assignments – online or otherwise. Tips on awarding credit are given below.
   c) Use ½ sheet of paper with 1 or 2 questions only. Distribute at start of class and have anonymous replies dropped into a box as students leave at the end of class. Giving students 1 or 2 minutes (timed) for this task sometime during class emphasizes the value of feedback and encourages more students to contribute.
   d) Pose feedback questions using clickers; consider allowing students to discuss in pairs before answering.
   e) Consider a volunteer student "ombudsperson" or committee to collect and deliver anonymous feedback.
2) Awarding "credit" for answering online questions.
   a) For multiple choice questions (including Likert[ii] scale types), award full credit for any choice.
   b) Here's how to give credit for answering "anything" using a **Fill in the Blank** question-type in CONNECT:
      i) Pose questions so answers are succinct and uniformly formatted. Eg. ask for time on task in x.y hours.
      ii) Use the "Fill in the Blank" or "Fill in Multiple Blanks" question types.
      iii) In Connect, when defining "Answers", select the "Pattern Match" option and enter ".+" (no quotes) as the answer. This "regular expression" means *anything goes*. You can check that this works using the "Check Pattern" button. The "*More Help*" link (top of the "Create/Edit Fill in the Blank Question" pg) is useful.
      iv) Put something like "Full marks awarded for any response" in both Feedback boxes. Then click "submit".
      v) Set this question to be awarded whatever number of points you like. Could be 1, 0.5, etc.
   c) You cannot give full credit for all permutations in "Multiple Answer" questions, so just award zero points.
3) Analysis and follow-up strategies.
   a) For less than 30-40 students, consider transcribing answers and coding them in a spreadsheet to graph for follow-up in a subsequent class or online. Or just jot down the top 2 or 3 points that students are saying and then discuss these in class and/or provide an email with these data and your intended resulting actions.
   b) Perhaps plot results to show students, as shown in examples below.
   c) For more than 50 students, consider using a sampling approach. You will likely achieve your purposes even if you review only some of the feedback from a large class. You can say "your feedback suggests …" or "I noticed in feedback that …" or other words to that effect.

Some other references

- Gibbs, Graham, Claire Simpson (2005), "*Conditions Under Which Assessment Supports Students' Learning*", Learning and Teaching in Higher Education, Issue 1, 2004-05.
- Ivie, Rachel, Roman Czujko (2007), "*What's your survey telling you*?", Physics Today, Nov 2007.
- Nuhfer, Edward B., 2003 "*Of What Value are Student Evaluations*?" Center for Teaching and Learning, Idaho State University, accessed Jan, 2009, http://www.isu.edu/ctl/facultydev/extras/student-evals.html.
- Tomorrow's Professor Msg.#1170, *The Role of Student Evaluations in Tenure and Promotion* at Tomorrow's Professor: http://cgi.stanford.edu/~dept-ctl/cgi-bin/tomprof/posting.php?ID=1170 (accessed Oct. 28 2013).

This "baker's dozen" is provided in no particular order; hopefully they provided some ideas or inspiration.

1. If we were to post online questions and discussions to help you study for the final exam, what are 1 or 2 topics that you would like to practice?
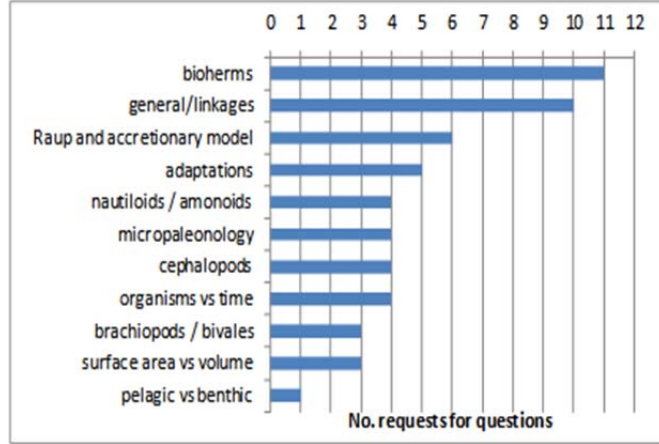
2. What are 1 or 2 things you really like about this course? (Asked the first time a new course was offered – NB teams!)
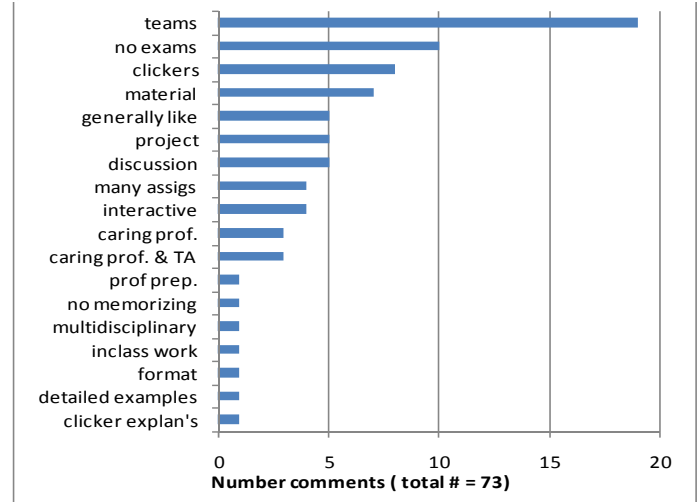
3. How often do you do the readings?
- Never   0%
- Occasionally   6%
- I do about half   24%
- Most of the time   29%
- I do all the readings 41%

4. Readings prepared me for the lectures and problem-sets.
- Strongly agree   6%
- Agree   35%
- Neutral   24%
- Disagree   18%
- Strongly disagree   6%

5. How do you feel about the "name-sticks", where the instructor randomly calls on students?

Positive:
a) They keep me alert in class
b) Pretty useful for participation – use more consistently.
c) Great!
d) I like it. It keeps me on my toes.
e) They are fine
f) Good idea!
g) Great because our class is to quite (even if they were a little scary at first).
h) Effective – it makes all students participate.
i) I like them. They force me to pay attention to avoid the humiliation of not knowing how to answer a question.

Negative:
j) Indifferent. Not sure if they're necessary in a small class with decent participation.
k) I'm developing anxiety to be honest. No joke. I feel particularly low about myself when I can't answer a relatively simple question because I get so nervous. But that's life!
l) I hate them. They put you on the spot.

6. Regarding the 2 classes on ground penetrating radar, what are you either puzzled by … or … intrigued by?

Puzzled:
a) it was mentioned freezing and saturation affects penetration. Is there also a relation to porosity?
b) how can you differentiate between layers, scattering & noise?
c) How to see layers in the data set
d) types of possible patterns
e) teminology and units (ohms, seimens, etc)
f) more practice with data sets
g) what is the signal
h) how does the signal travel
i) by noisy diagrams
j) how to interpret the GPR data to find layers.
k) I am puzzled by reading common offset GPR data with scattered information and interpreting patterns from this data

Intrigued or other:
l) using the common midpoint method the direct return should be the speed of light! Makes sense; thought it was pretty cool!
m) I am intrigued by the fact that the common offset could be directly correlated to a cross section
n) good lecturing – great way to keep class interested and awake.
o) having class tutorial aside from labs would be useful for students to get a better grasp of the material.

7. "There is enough feedback to help me judge my progress: - Strong agree or agree: 30% - Neutral 30% - Disagree / strong disagree: 40%	8. Discussions in class help clarify concepts: - Strong agree or agree: 85% - Neutral 10% - Disagree / strong disagree: 5%
9. "Labs need more time explaining concepts and purposes: - Strong agree or agree: 70% - Neutral 12% - Disagree / strong disagree: 18%	10. Most of my study time is with peers: - Strong agree or Agree: 70% - Neutral 15% - Disagree / strong disagree: 15%
11: FIRST - Now that we are half way through this course, I feel that I should modify my study habits. - Strong agree or agree: 23% - Neutral 41% - Disagree / strong disagree: 35% THEN - If you answered "agree" to #18, what changes will you make? Results graphed →	 What changes to study plans will you make?

12. For a brand new course, these (and other) questions were asked in 15-minute midterm survey which students knew was coming from day one, and which instructors used to acknowledge the challenges of getting priorities and strategies right the first time. These questions were 5-point Likert Scale questions: strong agree; agree; neutral; disagree; strongly agree. Results are presented in order of "agree", after combining strongly agree with agree, and strongly disagree with disagree. It was gratifying to see endorsements for permanent in-class teams and clicker discussions. It was disappointing (but not unexpected) to see these 3rd and 4th year science students disliking math in this 3rd yr science elective course. Some resulting actions are noted in *italics*.

a. The collaborative work in class (pairs or teams) is helping me understand the concepts and course material.
b. The follow-up discussions to clicker questions help clarify the concepts.
c. I am enjoying the general format of this course.
d. I like having a project as a major component of this course.
e. The clicker questions help clarify the concepts.
f. I would prefer the project to be worth less than 40%.
g. I find taking notes in class to be an important part of learning the material.
h. Now that we are half way through this course, I feel that I should modify my study habits. (*Action: as below*)
i. Most of my studying time outside of class is done with peers, either in person or on-line. (*Action: discuss study strategies appropriate for this course during class*.)
j. I would like more emphasis on quizzes and exams.
k. The general level of the readings is too difficult. (*Action: incorporate more articles.*)
l. I would like there to be more problems that include some calculations. (*Action: discuss the need for quantitative thinking in this discipline, and how to practicing it.*)
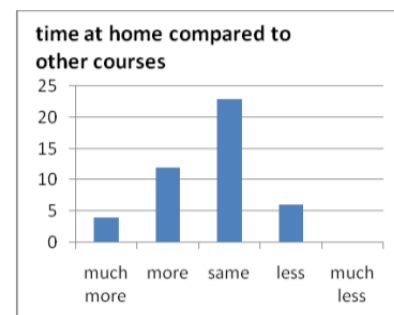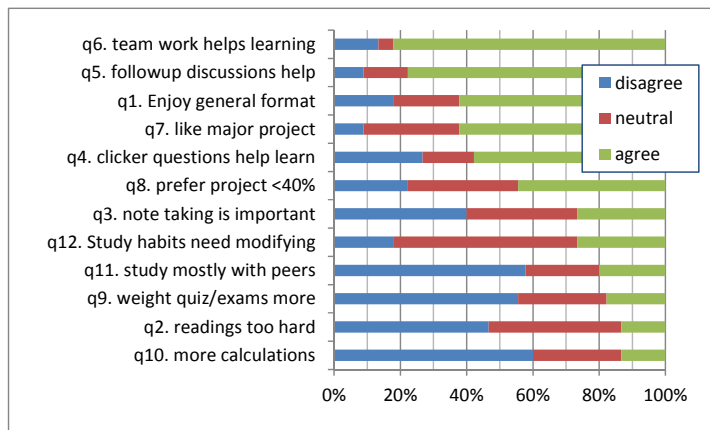
13. On average, how does time spent at home compare to your other courses?