

## General Model for STLF-Faculty Member Interactions

Abbreviations used: **STLF**: Science Teaching and Learning Fellow (see [www.cwsei.ubc.ca/department](http://www.cwsei.ubc.ca/department))  
**FM**: Faculty Member

This is intended to be a general example of the interaction between STLFs and faculty when working on a course. Nearly every situation will have its own unique characteristics that will make it desirable to vary somewhat from this. The STLF may have a larger or smaller role and responsibility in the various activities, but in all cases it is important that the faculty members are committed to the improvement effort from the beginning and feel ownership of the final product.

For a course requiring a major redesign, it is highly desirable for the STLF and FM to begin work some months before the course is to be taught to develop learning goals and carry out the basic course design. Often, the STLF will be involved in observing and assessing the learning of students in the course one or two terms before it is to be changed.

**Who's involved:** Typically 1-2 instructors (faculty members) and 1 STLF. If there are several instructors, there needs to be one who is clearly "in charge" of the course. Ideally, a working group of several other interested faculty have occasional involvement to ensure coherence with the rest of the curriculum.

**How many iterations:** typically two iterations of a course to approach "full implementation"

**Learning goals** (statements of what students should know and be able to do)

**Faculty:** Give the STLF the initial idea/content of the course and topic level goals. Thereafter, write learning goals (primarily lecture-level, but some course-scale), based primarily on content that will be covered in class, text assignments, and assessments (existing quizzes, homework, exam questions, etc). Discuss with STLF.

**STLF:** Offer advice, comments, and edits to faculty-written goals, help faculty members keep on top of production of goals. Convene or interview working group and other faculty members to provide input. Review textbooks to see how different books align with goals. Explore comparable courses at other institutions for possible ideas and materials. Review research literature to find relevant material.

**Assessment tool** (a validated conceptual survey tool)

**Faculty:** Develop initial open-ended questions to what they think are the key concepts (existing exams, homework, clicker questions, and past experiences in the classroom are useful guides). **Be willing to consider changes to teaching plan based on outcome of the initial concept assessment survey.**

**STLF:** Provide feedback on initial faculty-developed assessment tool. Administer tool to students and collect feedback on open-ended questions, incorporate observations from lecture on student learning difficulties. "Validate" question set, develop improved distracters, document common student learning difficulties, and develop additional questions through student interviews, classroom observations, run/observe study sessions, etc.

**Teaching/learning resources and materials** that aid student learning of faculty goals; document common student learning difficulties; document research justification associated with teaching/assessment materials.

**Faculty:** Send learning material (lecture notes, outlines, slides, in class activities, homework, clicker questions, exams etc) along with any comments or insight about that material from past experiences (e.g. "by this point students are asleep", "I have never felt comfortable with this material", etc.) **at least 2-3 days before use in the classroom** to the STLF for comment and suggestions. Develop some new materials on own or in collaboration with STLF.

**STLF:** Give feedback to faculty on clarity of materials, alignment with learning goals, and identification of known or potential student learning difficulties. Develop additional teaching materials (clicker questions, in-class activities, homework, exam questions) to promote learning; review of relevant education research; document research justification of approach/questions/activities if possible. **Feedback and any new materials given to faculty at least 1 day before use in the classroom.**

**Sustainability plan** (collect documentation and materials relating to this course in one place for faculty to consult, in both digital and paper format)

**Faculty:** submit pertinent teaching and assessment materials to STLF

**STLF:** create written review of pertinent research literature, collect materials from faculty, organize faculty materials and STLF's own observations and documentation.

## **GENERAL TIMING**

### **Term before STLF becomes involved in making any changes.**

STLF spends time collecting data on FM priorities, views of other FMs about desires for course, student thinking, difficulties, successes, etc. through sitting in on classes, interviewing current and past students, observing study and help sessions. STLF and FM get to know each other.

### **Prior to term of change**

#### **Faculty:**

- Determine what their personal goals, both learning and pedagogically, for the course
- Write initial learning goals/course big ideas
- Work with STLF to create draft of pre/post assessment by discussing previous classes, exams, and homework problems. Initial assessment would have open ended questions.

#### **STLF:**

- Meet with faculty member to discuss various goals for the semester. What are the overall learning goals for class? What are the big ideas that the faculty are looking to get across to students? What are the pedagogical skills that faculty would like to develop.
- Begin editing learning goals, by looking at initial learning goals and past course material. Vet various iterations of learning goals by sharing with the instructor(s), working group, and other STLFs in the department.

### **Throughout the term**

- Faculty and STLF meet for 1-2 hours every week to share thoughts and feedback on the course. This is in addition to any necessary e-mails to exchange material mentioned above under teaching/learning resources. In addition they brainstorm about what faculty can do to achieve their pedagogical goals that were expressed at the beginning of the semester.
- In order to receive feedback for changes to the course in current semester, faculty must send existing material to STLF a minimum of 2-3 days before its use the classroom (further in advance is better). For topics that have been difficult in the past, suggested turnaround time is a week so that the STLF and the faculty member have time to discuss various aspects (e.g. student difficulties, relevant research, teaching approaches).
- STLF attends many of the lecture/class periods to provide feedback on how changes/edits to material went and observations of student engagement and learning. STLFs also report information on students' study habits and abilities to integrate material on their own.

## **OTHER COMMENTS**

FM should be willing to be flexible throughout the semester -- e.g., consider adopting changes to lecture at the last minute or consider major adjustment to current teaching material. STLFs need to be similarly flexible to accommodate FM priorities. **Timely feedback from the STLF to the FM is very important.**

Student interviews during the first term a course is being extensively changed may be limited due to time intensive work on learning material, however STLF attendance in the classroom and many additional settings (labs, tutorials/recitations, optional homework or review sessions) can be used to capture student thinking (e.g. difficulties with topics or teaching approaches and value of various aspects of course) as well as looking at answers on open-ended homework questions. Interviews are utilized routinely during the 2<sup>nd</sup> semester of the course transformation.