Extending the Walls of the Classroom

Introduction

The idea for these activities were inspired in part by graduate student Craig Carey (craig-carey@uiowa.edu) of the University of Iowa during his workshop at the "Rewiring the Classroom" symposium (23 Feb., '13), an event which he was a co-organizer as a HASTAC scholar.

Open access media is gaining popularity as the digital-age and tech-boom merge to form what are called "social networks." Principle to these networks is the creation and maintenance of a personal profile (or avatar) that represents a users contribution and access. Online hosts are now able to exploit multiple behaviors for the sharing of information that an increasing number of people are becoming familiar with and accustomed to. These include: reading/writing reviews of products, creating/commenting a blog post, searching for advice on public forums, communicating through email, uploading media, and tagging digital content. Because these behaviors include not only social interaction but also the mental organization of information (access), it seems that they can be implemented by students in the classroom to contribute to the learning experience and also gain some personal responsibility when engaging with online material. However, what is always in an instructor's mind is: how much upkeep is necessary (minimal) and how much external support is available (maximal).

The following templates are guidelines for how a wiki site may be used to foster class-wide participation and collaboration after the students have left the actual classroom. A basic premise is that the students be divided into general groups that rotate each week into different roles such as:

- **Synthesizers**: a small set of closely aligned students (such as a TILE table) collaboratively write and edit a summary of class content
- **Bloggers**: individual students may post their review of a topic prior to class discussion
- **Respondents**: these students are responsible for maintaining a lively discussion on the course site by leaving comments after posts
- **Observers**: off-week students should only be aware of what content is posted to the course site and can leave suggestions/comments/questions to the general forum page

1. Class Notes Template

A sample guide for how students may summarize a week's discussion is outlined below. One major advantage of this assignment is that it provides useful review material for exams without any effort from the instructor. The post may be graded for completion and checked for errors by a teaching assistant.

Synthesizers are responsible for developing and maintaining a wiki page with class notes for the two class sessions.

**Summary**

- Write a statement of the main idea or unifying theme of the week and how it was exemplified during class discussion
- How do the required textbook readings relate to the topic?
- What main points were identified?
- Where any questions or problems raised by the class?
- Discuss one key idea that was best demonstrated by the in-class TILE activity
- Did you find anything limiting about the activity that might require outside reference?

The student's response to the summary section of the class notes provides a periodic self-evaluation of the progress of learning objectives and how the students perceive them. This can be used to refine lecture topics or TILE activities.

**Context**

- Clarify how this topic relates to another topic or larger theme that has been discussed previously
- Identify and explain how a passage in one of the supplemental readings connects with this topic, what new questions does this passage raise?
- Research, write a brief description, and post a link to a current piece of science writing that discusses a discovery related to this topic

**Key Terms and Definitions**

- List and define key terms that were brought up in class

**External Links**

- Find and post at least 2 links to reputable sources that provide further information about something brought into discussion during class or through the text

**Suggestions**

- Work collaboratively; do not divide up the tasks!
- As a group continually edit, revise, and make changes to the notes to strengthen them as best as possible. These will be a reference not only for you, but for your classmates as well.
- Include only as much detail as necessary to synthesize the main points and identify any connection to a larger theme.
- Try to brainstorm about the threads that interweave this topic to the framework of the course before starting any of the sections.
Do not post links without any description of what is contained within them.
Remember that this will be a working document and that you can respond to any of your classmates' comments/suggestions at any time. However, please provide the initial draft promptly.

2. Blog Template

A blog is a useful space for student's to express their ideas related to the course and to present external material found online.

Bloggers simply choose a topic found in the readings to respond to. They may then identify any questions that were left unanswered and may incorporate outside research to elaborate upon that topic. Any resources should be given proper citation, but are not required to complete the post.

Suggestions
- Express yourself clearly first by drafting an outline of your thoughts about the identified topic. Do not rush to online research.
- Think about the scientific disciplines that are invested in researching this topic.
- Are discoveries related to this topic dated to any historical time period that you can think of? What is the consequence of this context as it relates to the popular perception of science?

Respondents are designated to provide respectful feedback to at least a few of the blog posts. Remember that even comments may be commented on and responded to. Please keep comments intelligent and specific.

Suggestions
- Good comments extend and expand someone else's thinking and can also represent helpful criticism.
- Respond promptly and politely.
- Focus on bringing outside discussion into relevance to the class and into transition to the next class period.

3. Forum Template

The forum is a very useful space for continuing popular discussion, raising concerns, or posting exciting news to the class. As a thread of topics, any user may update it continuously.

Observers are only required to scan over the online activity related to the wiki site and take notes about observations that they wish to discuss in class.

They may, however, along with any other student decide to add a forum topic page about any material related to the course. This informal space can be used to generate interesting discussions or answer any specific questions, but it should not replace office hour meetings with instructors when available. A teaching assistant will likely monitor the thread.

4. Email Feedback System

Students who are accustomed to the skill progression found in digital games are more inclined to focus on achievement and feedback as markers for success. Instructors can exploit those expectations in the classroom by designing activities with self-recognition of learning (prediction, defense of an argument, creating a model, etc.) and providing a clear metric for advancement in the course (clicker questions, commented assignments, progress report, etc.). In an educational setting games can most easily be compared to in class activities, as the social element often makes learning more exciting.

What attracts people to games?
- Sense of autonomy: players have a control over the outcomes of their actions
- Regular feedback: games advertise themselves through rewards and recognition (intrinsic vs. extrinsic motivation to keep playing)
- Growth: the final objective of a game is successful completion through mastery

What are the key design elements found in games?
- Voluntary participation: you do not have to play if you do not want to (having student groups with specific roles helps to encourage participation and limits individual students being left behind)
- Goal: what is needed to advance (learning objectives must be clearly presented to the students)
- Rules: these control the players' actions and define their expectations within the game (templates are the best way to match instructor and student expectations on assignments and activities)

Depending on your pedagogical standpoint, having only one assessment system in place (grades, essays, or exams) may be sufficient. However, having more opportunities for the student to demonstrate her/his understanding (in-class activities, multiple assignments, peer reviewed essays, or lab report) can decrease grade anxiety and increase comfort with the material.

Some of the above ideas can be applied in a course through a mass email system whose main features are:
- A tailored email (automated) can be sent to each student detailing information such as grades, specific feedback, number of posts this week, etc.
• Symbolic "badges" (simple images) can be incorporated in the email to represent checkpoints such as answering x-number of click questions correctly, completing assessment surveys on time, being a frequent blog contributor, etc.
• Assists in concept mastery, what sections of the exam did the student have the most difficulty? (learning objectives)
• Provides a format for quickly emailing the entire class with specified message (have/have not registered for event, have/have not completed online survey)
• Allows a copy or "snippet" of previous work (essays) to be sent for reflection

The information required for the bulleted functionalities can all be stored, organized, and selected from using a spreadsheet. One major advantage of incorporating learning objectives into course design is that by the completion of the class, the instructor will be able to identify specific areas of material that the student was most comfortable with or had the most trouble with. This information can then be shared anonymously with other faculty/departments or used by the student in a form of tracking that assists in degree advancement better than a simple transcript.

Tutorial
The email feedback system presented here is based on the design of graduate student Cody Reeves of the University of Iowa and uses three commonly available Microsoft products: Excel -> Word -> Outlook

Excel
Class information can be recorded in a spreadsheet file as this example shows. Students’ names appear in a single column next to their email addresses and the subsequent columns can be filled in a grade book style. The novel approach appears in columns designated for "badges," represented in binary code (0,1) assigned by an Excel formula for yes/no achievement (# of points out of X), and comments for any text. Additional columns can be used to track a project timeline or progress (abstract, bibliography, outline, first draft, etc.).

Word
1. Open a new word document and select the "Mailings" tab or "Mail Merge Manager" under the Tools tab.
2. Create new email message or letter document
3. Select recipients from the second column of the Excel spreadsheet
4. Insert a "merge field" (alt-F9 show/hide field code) and use an "if-then-else" rule to include a message or assignment column value. Images can be included by inserting a picture with "link-to-file"
5. Use alt-F9 to preview and cycle through students
6. Finish and merge, the final documents can then be sent through an email client such as Outlook

Some of the instructions listed are different depending on the operating system (Mac OSX, Windows PC) and the version of the product (2004, 2010, 2012). Create a document of your own in order to gain familiarity with the software. As a word of caution, sending out mass emails can clutter a users sent-box so it is suggested that instructors create a generic email specifically for their course.