Encouraging Students to Prepare for Flipped Classes

For teachers who are transitioning their subjects to flipped approaches, one of the most common concerns is how to motivate students to do the pre-work. The aim of pre-work is usually for students to gain an overview or initial understanding of new ideas, so that they can apply them, test them out or explore further to gain deeper understandings and skills through collaborative activities during class. So pre-work should be designed in conjunction with designing activities for the face-to-face classes, with clear benefits for students who prepare.

Expectancy-value theories of motivation (Wigfield & Eccles 2000) suggest that students’ engagement in and persistence with academic tasks depends on whether they believe that they will be able to do the tasks successfully, and the perceived value of the tasks. Factors that influence perceived value include: the effort needed to complete the task and cost in terms of lost opportunities to do other things; intrinsic interest in the task; how useful it is to the students’ future; and how important it is to complete it successfully. These factors, along with experience from successful flipped learning, suggest some principles and guidelines for encouraging students to prepare.

**PRINCIPLE**

**GUIDELINES AND EXAMPLES**

| Ensure students know what they’re expected to do | Provide clear information about the expected pre-work in class and create a weekly announcement from UTSOnline, with a link to the pre-work. |
| Ensure the pre-work material is accessible | Use consistent locations for pre-work materials. Where feasible, use formats accessible from mobile devices. Make the pre-work available at least a week before the class. Use the library’s Digital Resource Register for copyright material. |
| Provide pre-work that most students will be able to complete successfully | Design pre-work to introduce students to new ideas and concepts that they will build on, apply, test out and explore further in class.  
• Provide short (5–10 minute) video/screencast explanations of key concepts.  
• If you expect students to read long, difficult articles, provide some support (e.g. a short reading guide) or point out must-read parts.  
• Provide opportunities for feedback (e.g. formative quiz questions). |
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<td>Have realistic expectations of students' time</td>
<td><strong>Plan pre-work</strong> so it takes no longer than a lecture that it might replace. For students new to flipped classes, suggest that they schedule time to do the pre-work into their calendars, as if it were a timetabled class.</td>
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<td>Make pre-work interesting and enjoyable</td>
<td><strong>Use a variety of formats</strong> (e.g. mix short lecture videos with TED Talks, Khan academy, images, text, animations) and include practical, real-world examples. <strong>Stimulate curiosity</strong> with scenarios, simulations, problems with multiple solutions. <strong>Encourage collaboration around pre-work:</strong> - link pre-work videos or readings to online discussions - use A.nnotate for collaborative annotation of readings - encourage students to form pre-work study pairs or groups. <strong>Ask students to choose</strong> material (e.g. newspaper articles, blog posts) to bring to class.</td>
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<td>Emphasise why the pre-work will be useful and make sure there are benefits from doing it</td>
<td><strong>Have clear connections between the pre-work and in class activities:</strong> - start the class with a small group activity based on the pre-work - ask students to post questions about the pre-work online before the class, then use the questions as the basis for class discussions - if you have quiz questions in the pre-work, show student responses to the more challenging ones, and invite students to discuss in small groups. Don’t spend the class time repeating the pre-work for those who haven’t done it.</td>
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<td>Make doing the pre-work more important to students</td>
<td><strong>Make use of peer expectations:</strong> - ask students to bring individual answers to quiz questions, then work on the questions collaboratively, using scratch cards or similar (as in TBL) - use SPARKPLUS (Self and Peer Assessment Resource Kit) to provide feedback on preparation and contributions to group activities. <strong>Create clear links between pre-work and assessment.</strong> For many students, assessment is the curriculum (Ramsden 2003) so help students to see the links, for example: - include formative questions, with feedback that will be useful for assessment - have pre-work that involves preparation for assessable in-class tasks - require students to prepare a short piece of work and bring it to class; collect this pre-work once or twice during the semester - inform students that you are tracking pre-work completion and it’s a subject requirement (make sure you put this in the subject outline) - as a last resort, assign marks for pre-work completion or for doing quizzes or similar in the pre-work (usually less than 10% of the subject marks).</td>
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**EXAMPLE: MAKING READING SOCIAL WITH A.NNOTATE**

A.nnotate is software which allows lecturers to upload PDFs of readings (linked to the library’s Digital Resource Register) for students to annotate collaboratively in groups. Each student can see and comment on the annotations made by others. UTS communications lecturer Jenna Price and colleagues have been using A.nnotate software to encourage student pre-reading by making the experience social. More than 80% of tutors and students reported that this made the reading more engaging, improved the level of reading before class and improved the quality of tutorial discussion. For more information, contact your IML faculty liaison person or learning technologist.
Scaffolding Learning

Keith Willey and Anne Gardner have been flipping engineering classes at UTS for a number of years. They often ask students to do pre-work questions in SPARKPLUS before they come to class, then show the students’ responses and use them for discussion at the beginning of the class. They emphasise the importance of scaffolding the learning experience, to move students away from a culture of expecting marks, to one with a focus on learning, feedback and reflection on learning. They describe some of their scaffolding as follows:

• explain why you designed the activity this way
• explain what opportunity for learning this activity provides – both what you expect them to learn and how they may best use the learning opportunity provided by the activity
• explain how they can evaluate how well they know what you want them to learn from this activity
• explain the impact of learning this – how can they see the world differently with this new learning? (http://www.uts.edu.au/sites/default/files/Flipped%20Learning.pdf)

They also see it as important for students to be able to see how they are learning, and have activities that encourage students to reflect on how their understanding is changing over the course of the session.


Just-in-Time Teaching (JiTT)

Julie Schell (2012) from the ‘Turn to Your Neighbour’ blog (http://blog.peerinstruction.net), recommends this strategy for encouraging preparation. It has some features in common with Willey and Gardner’s approach. Students do the reading, watch videos, or similar, then complete questions online. The conceptual questions assess students’ understanding while the feedback questions ask about areas of difficulty. In class, the lecturer begins by showing common themes in students’ responses, then focuses on the areas of difficulty and uses peer activities and clicker responses to engage students. Students can see that if they haven’t done the work, they are already behind at the beginning of the class.

A physics professor used a JiTT model to engage his students with reading textbook sections before class then engaging in peer instruction during class. Each reading was accompanied by open-ended questions and two multiple-choice questions which students were expected to do before the class. Doing the questions was worth up to 15% of the subject marks, which were gained for making the attempt rather than getting correct answers.

If a student did not do the readings on a section of work, more weighting was given to the exam. Almost 80% of students did the reading and they felt more prepared for exams.

Note: the class was small, but a similar approach could be used in a large class with automated marking.
Seek feedback on your pre-work engagement strategies

**Collect data:** UTSOnline, YouTube, Echo 360 and other technologies allow you to track numbers of views and/or the activities of individual students. This may allow you to identify more and less successful pre-work strategies, seek feedback and make changes.

**Ask the students:** Show available data to the students and seek their responses. Ask questions in class, directly or using clickers or surveys to find out why students do and don’t do the pre-work. Make adjustments where you can.

**Engage the tutors:** If you have a large subject with multiple tutors, make sure your tutors are well briefed on your expectations of students, and on the aims of the pre-work. Seek feedback from tutors on students’ responses to the pre-work and on what students are doing.

**Useful websites**


Schell, J. Turn to Your Neighbour (2012–2013):


Lynda.com flipped classroom module (accessible free through the UTS library):

Resources on Just-in-Time Teaching (JiTT) in Economics can be found at: [http://serc.carleton.edu/sp/library/justintime/jitt_in_economics.html](http://serc.carleton.edu/sp/library/justintime/jitt_in_economics.html)

Resources on TBL can be found at [http://www.teambasedlearning.org](http://www.teambasedlearning.org)

**References**


