Preparing Materials for Blended and Flipped Learning

What does blended or flipped learning mean?

There are many definitions of blended learning but at its most basic, it is 'the thoughtful fusion of face-to-face and online learning experiences' (Garrison & Vaughn 2008, p.5). Flipped learning, by extension, involves changes in some of the roles of learners and teachers. Content which may have been traditionally delivered face-to-face (f2f) is made available for students in the online space before they come to class. This frees up time in the f2f environment and acts as preparation for more interactive learning experiences (Abeysekera & Dawson 2015). It also enables the content to be provided using a selection of different formats, which may suit a diverse range of learners.

What works well online?

The measure of success of the online, preparatory materials may well depend on the scaffolding provided to students and their expectations of what is required. In addition, it depends on whether the completion of the online preparatory materials impacts on the ability to adequately contribute to the f2f class time.

This short guide introduces some key issues to consider when deciding to move content online in preparation for flipping a topic, module or subject:

- tips on using media
- tips on providing open educational resources (OER)
- tips on making videos
- tips on preparing and assigning reading work
- tips on creating formative quizzes.

Further detailed information on the above topics can be found at:
https://docs.google.com/a/uts.edu.au/document/d/1amE3cgRrMYj0IdGR4THqL_zW4CQQNO0pWqgLu5cOGic/

Screencasts can be used to create short videos, which describe or work through a problem. These can be posted in UTSOnline for class preparation and again later for revision.

James Wakefield and Dr Jonathan Tyler from the UTS Business School and Jessica Frawley and Dr Laurel Dyson from the Faculty of Engineering and Information Technology (FEIT) flipped this idea and had students create the screencasts. The subject Accounting for Business has a large cohort (up to 1450 enrolled students) each session, with a high percentage of fails. The team wanted to change this situation and engage those students experiencing difficulties understanding the content or who were not being stimulated by the subject matter.

Dr Keith Willey and Dr Tim Aubrey from FEIT wanted to use students' time in class more productively and for students to really understand what it was they were learning.

> In this subject students get readings, design problems, inquiry-based problems, and online research. And then using SPARK^{PLUS} as a tool we get them to post their opinions, and answer some multiple-choice questions about what they were meant to learn. We then publish those results to the students without correct answers. Being able to discuss their choice and read other students' reasoning they can hopefully start getting some opinions about this subject's content and outcomes, and all before they come to class.

What does not work quite so well online? What should I do instead?

DON'T	DO
Place a set of PowerPoint slides online for students to read through	Give the notes to go with slides or the slides with a space for student to make their own notes. Alternatively develop voice-over-slides
Upload a one-hour recorded lecture for students to listen to before attending class	Provide short grabs (around 3–5 minutes but no longer than 10 minutes) highlighting the most important concepts or those that will be utilised in the f2f session
Provide too much of the same type of content	Instead of a dense text, give students three different types of resource and (if appropriate) a choice, for example, a blog post (from a reputable source), a short conference paper and a short video clip
Make too many videos	Video production can be time consuming and costly and not everything is best presented through video; check if there is already a video available and link to or embed it

Limit preparatory activities to no more than 20–30 minutes. For more information see the **learning.futures** resource, 'Encouraging students to prepare for flipped classes'.

Where should I begin?

As in any approach to learning and teaching design, we want a seamless alignment between what we are hoping to achieve and what we are asking the students to do (Biggs & Tang 2011). Some examples are provided in the following table.

EXPECTED LEARNING OUTCOME FOR STUDENTS	TEACHING ACTIVITY	SUGGESTED APPROACHES AND TOOLS
Gain a sense of community and belonging	Welcome students	Short headshot video introducing yourself and the subject
Understand the subject requirements	Talk about your Subject Outline	Screencast of the Subject Outline
Check students' understanding of concepts	Asking questions	Test or survey tool in UTSOnline Polling Concept map tools
Build awareness of the subject content	Readings	A.nnotate UTS Library
Be prepared for deeper discussions	Explaining concepts	Voice-over-slides Explain Everything (app)

Creating Flipped Resources Leads to Active Participation

INTERVIEW WITH DR BLAIR NIELD, FACULTY OF SCIENCE

Loraine Holley, Cathy Gorrie, Kris McGrath and I have been working with flipped learning for two years now, and together we have created many flipped resources for Medical and Molecular Biosciences (MMB) students (now the School of Life Sciences). I have used these in the subject Cell Biology and Genetics (CBG) (91161).

In CBG (first-year biology class), I have made screencasts of my learning material and loaded these as videos onto YouTube. I email the students the week before my session via an announcement on UTSOnline with detailed instructions and advice on how to approach their learning.

I have researched memory formation and recall, and have concluded that engaging with the material by being physically involved (writing) in the session is far better that sitting passively while somebody talks at them. I give the students the slides as a PDF file via UTSOnline. They don't get my 'thought process' notes though, as this is what I say/write in the video, and I think if they write their own notes they learn more.

The YouTube videos are made via Explain Everything (app), using the set-up in the IML sound booth and everything is UTS: Science branded. If the students are coming to UTS for their degree, I want to provide them with UTS resources.

Also, I believe the work is high quality, as students won't watch a video with poor visual and sound quality.

In the lecture timeslot (only 1.5 hours) the students are given a set of questions to work on collaboratively. Unfortunately I do not have access to tutorial/pod rooms or collaborative theatres, so the group work is done in a 400 seat traditional tiered theatre. Obviously not ideal but it is still possible. It is just me and 400 students and while I am busy, I think it works as best it can. I answer the students individually in their groups, and if I get the same question a few times, I do it over the microphone. There are more questions that can be done in the 1.5-hour timeslot, but they can do work in their own time, as it is just like study. I don't release the answers online. I encourage them to work in groups, ask other students, refer back to the video and their notes, ask me in the lecture timeslot, or email me to make an appointment so we can work through it together. Learning how to approach a question and reason it out, is far more important than memorising an answer.

Feedback from students on this style of learning has been varied. The resources were time consuming to set up, but now I have invested this time I can work towards deeper levels of engagement with the content, through further inquiry and discussion in the face-to-face session times.

Additional resources

Blog post outlining some current research and evidence of flipped classrooms: http://www.ascd.org/publications/educational-leadership/mar13/vol70/num06/evidence-on-flipped-classrooms-is-still-coming-in.aspx

Website from New York University on flipping classes: http://www.nyu.edu/faculty/teaching-and-learning-resources/instructional-technology-support/instructional-design-assessment/flipped-classes.html

My Flipping Failure – a Blog Post from a Chemistry Professor: http://www.emergingedtech.com/2013/05/my-flipping-failure/

Three Critical Conversations Started and Sustained by Flipped Learning: http://www.facultyfocus.com/articles/effective-teaching-strategies/three-critical-conversations-started-sustained-flipped-learning/#sthash.tw38Nze1.dpuf

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