Dr Andrew Fairbairn

Context:	Second- and third-year Archaeology courses in the BA major
Pedagogy:	An integrated approach to designing and delivering courses using active learning pedagogies, engagement strategies and technologies for the flipped classroom model
Technology:	Blackboard LMS, Scenario Based Learning interactive (SBLi), Articulate presentation tool

Overview

This case study examines how using the flipped classroom model provides opportunities to design and deliver courses using active learning and engagement strategies to facilitate students' teamwork, problem solving and critical thinking skills in a collegial environment.

Case study summary

Benefits

- Students appreciate having opportunities to confirm their understanding of content In informal and more formal formative learning activities.

- Using active learning pedagogies has helped support engagement, critical thinking, discussion and problem solving skills.

- Online components allow students the flexibility to access core information at their own convenience.

- The model emphasises flexible active learning.

- Using online components is a way to align assessment, teaching and review for this integrated group-based learning approach, and allow for many levels of engagement.

- Planning and posting lectures in advance means the lecturer is very well prepared for class.

Issues

- Flipping the classroom initially requires time and effort to plan and redesign the curriculum, create online resources and design classroom activities, but these materials can be used again in future course iterations with minimal changes

- Staff may need to learn UQ corporate tools or other technologies to support the development of online learning activities.

Reasons for adopting the flipped classroom

Andy Fairbairn found that the traditional lecture-tutorial format was not working well for his archeology courses, which required students to engage in hands-on, practical activities or discuss key problems in detail. Andy decided to flip his classroom by placing lecture content online for students to view in their own time, to provide more opportunities for problem-based learning, group learning and discussion activities during contact sessions. He also found that a less formal structure to the classroom opened up opportunities for peer learning and allowed him to identify and tackle misconceptions, guide learning and establish rapport with students.

Integrated approach

The archeology classes combine an integrated approach to delivering online and face-to-face components with an emphasis on active learning. Students can view recorded lectures in their own time, answering various questions as they work through the materials. A study question is posed at the end of the lecture, and that same question is discussed during the contact session. The study question forms one of the potential choices in an exam, so it's a way of aligning assessment, teaching and review to consolidate the learning experience.

The purpose of the online component is to host core information, such as recorded lectures and readings, while lectures and tutorials are transformed to accommodate active learning strategies such as problem-based learning and group discussions.

Online learning components

Andy uses the following tools to deliver the online components:

- UQ Blackboard is used primarily as a repository for core learning materials and recorded lectures that students can access at their own convenience. Articulate (below) is used to present lectures using a combination of recorded lecture and PowerPoint slides.

- Scenario Based Learning interactive (SBLi) is an application developed at UQ for building scenarios. Scenarios are an effective method for students to contextualise learning within an inquiry-based framework and develop critical and problem-solving skills. Automatic feedback is embedded in the learning episodes for timely correction and guidance. As SBLi is an electronic tool, students are able to revisit scenarios many times at their own convenience, to confirm understanding and access learning resources.

- Articulate is a presentation tool that combines recorded lectures with presentation slides. Questions and other activities can also be easily integrated, though this is very expensive.

Contact sessions

The class, or contact session, usually starts with a review of the previous lecture followed by free-form questions and answers. Then there will be a group activity, such as a game or puzzle, to discuss the key questions that were posed at the end of the online lecture. Andy sometimes experiments with changing roles, allowing students to do the teaching, and informal and media driven segments throughout. Tutorials become group practical sessions

and pave the way for active learning pedagogies such as problem-based learning, game-based learning and discussions.

Conclusion

Andy Fairbairn has found that using the flipped classroom model is a much more effective way of teaching than the traditional lecture-tutorial format—to date he has received very positive comments from his students. Active learning strategies, such as problem-based learning, peer learning and group discussions are especially useful for dealing with complex concepts. Using strategies to 'open up' the classroom to lively discussion and debate also encourages peer learning and helps foster engagement. The online component provides a way to deliver core content for students at their convenience, and their knowledge of content can be confirmed during face-to-face discussions and exercises. Although there is an initial amount of work required to plan and prepare online and face-to-face components, these can be reused for future courses.

Useful links

EDUCAUSE's '7 Things You Should Know About Flipped Classrooms' provides concise information about how flipped classrooms work and the benefits and challenges of their use.

Jon Bergmann, Jerry Overmyer and Brett Wilie are teachers in the US who have done extensive work with the development of flipped classrooms. 'The Flipped Class: Myths vs. Reality' is a three-part resource that defines what flipped classes are (and aren't), how to know when it's a good time to flip a class and the benefits of using them.

For further information, see the TEDI Flipped Classroom website.

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