Technology-Enhanced Learning and Teaching: A Guide

How do I design a technology-enhanced course?
The premise of good digital course design, similar to designing a traditional or face-to-face course, is not to begin with the technologies that would be used for the course but to consider them after the course examiner has finalised what they want their students to be able to **DO** (knowledge, skills, attitudes) on completion of the course. The course outcomes and, subsequently, the more specific learning objectives should culminate in the consideration and planning of the appropriate activities and hence, associated technologies that could be used.

Check the Designing a Course: a Step-by-Step Guide to get you started in developing a course.

Why use technology enhanced activities in my course?
Technology-enhanced activities can help you to achieve better learning outcomes through increased interaction and engagement, or to achieve educational experiences not previously possible, and to reduce the per student teaching load. This is especially important in large enrolment courses.

What technology enhanced activities can I use for my course?
The tables in this document present some examples of activities that academic staff can use to increase engagement and/or interaction with students when considering teaching in an e-environment, e-course or e-class.

The activities are divided into the three pillars of online learning: Student-Course Examiner Interaction, Student-Student Interaction, and Student-Content Interaction. Please note that the list of activities below is not comprehensive. It represents only some of the more popular methods.

There is not a 1:1 relationship between learning and teaching activities and educational tools:

- each activity can be supported by multiple tools e.g. course discussions could occur in Moodle forums or in Wimba Voice Boards
- each tool can be used to support multiple activities e.g. Moodle forums could be used to support course announcements, course discussions and discussions within groups within a course

What support and resources are available?
USQ provides many options for assisting you using a variety of technologies in your teaching and course preparation. These options include:
- Faculty-based mentors (faculty-based staff to provide hands-on support to academic staff e.g. Super-Users and or for specific tools e.g. Camtasia Relay mentors, Moodle mentors)
- LTSU Technology Advocate
- DeC (Distance and e-Learning Centre) media service
- ADFI (explorations related to emerging technologies)

- ICT Training (training in the use of USQ Core systems)
- ICT Service Desk (level 1 user support for staff and students if there is a problem with a USQ IT system)

In the first instance you should contact:
- Your Faculty-based mentor
- LTSU Technology Advocate, Dr Peter Evans on +61 7 4631 5583 or Peter.Evans@usq.edu.au.
- The Digital Tools for Learning and Teaching Brilliantly community overviews many of the tools that are currently used at USQ
- LTSU faculty representative

Student-Content Interaction
All student activities, including assessments, should be aligned with the learning objectives of a course. The activities should also be designed to meet the needs of all students regardless of the mode of learning. The content must cover all of the content detailed in the USQ course specifications, which are found in the course's Introductory Book and Study Guides.

Refer to the Educational Technology – Course Enhancement Tool Matrix for more information on each technology-enhanced tool:

- its status at USQ (a core system available to all, a supported system which is available to all, being piloted by a small group, or for future investigation)
- where training is provided
- where support it provides
- strengths of the tool
- things you should be aware of

A * signifies that more information on this tool is available in the Educational Technology – Course Enhancement Tool Matrix.

What	Details	Educational technology at USQ
Class discussion	A discussion board is a tool that allows groups to communicate online. Students can be required to post their opinions, ideas, and experiences, and also reply to their classmates' posts. The course examiner can pose questions relating to the textbook, lab activities, online presentations, readings, etc. **Hint:** Add discussion points throughout your materials asking students to respond relating the point to their current work or their knowledge etc. At the end of each discussion starter, ask students whose surname begins with certain letters (e.g. A – F) to post a 1 or 2 paragraph reply with the number of the discussion point at the start of the subject and the subject describing the point. Other students are then required to respond to these posts.	• Moodle forums *(text only) • Wimba Voice Boards * (text and voice)

Group work	A formally established assessment task to be conducted by a number of students with the purpose of producing a single piece or related numerous pieces of assessments. Students can collaborate in groups to brainstorm ideas, group formation, create learning contract, solve problems, become experts on certain topics, etc. They can present their findings to the class in the class discussion board. These presentations can be in the form of writing, PowerPoint presentations, or web sites. **Hint:** Moodle allows you to divide students in your course into groups either randomly or based on interests or your selection. Most Moodle activities (forums, chat, database, glossary, wiki) can then be set up in a 'group' mode so that a separate activity is automatically established for each group. Thus all students in group A will see the Group A forum while students in group B will see the Group B forum. Students can belong to several groups.	• Wimba Classroom* (breakout rooms) • Video conferencing* • Moodle forums *(text only) • Wimba Voice Boards * (text and voice) • Moodle Chat (for group discussion)* • Moodle Blog (for group discussion and ideation)
Written paper	Papers can be written on various topics. Prior to students submitting their work, papers can be checked by an anti-plagiarism service to educate students about collusion and plagiarism. **Hint:** Students can peer-review assignments submitted by other students	• EASE* (submission) • Turnitin *(educating students about plagiarism) • eMarking Assistant (to assist you in providing feedback) • Moodle Wiki
Research	Students can use the Internet to research questions, problems, events, etc. Prior to students submitting papers, those papers can be checked by an anti-plagiarism service to ensure that no plagiarism is involved.	• EASE *(submission) • Turnitin* (educating students about plagiarism) • eMarking Assistant (to assist you in providing feedback) • Moodle Wiki

Quizzes, tests/exams	Quizzes can be used to facilitate learning by ensuring students complete assigned readings and understood it. These quizzes can be "open-book", but the questions can be randomized so different students get different questions. Tests and exams should include short answer and essay questions that require higher-order thinking, along with supporting factual knowledge. The questions can be randomized so different students get different questions.	• CMA* • Moodle Quiz*
Practice quizzes	Practice quizzes can be given periodically throughout the course so students can gauge their understanding of the content. Specifically, these ungraded practice quizzes can be given prior to the final exams. These quizzes should include only objective questions so they can be graded by the computer, enabling students to gain immediate feedback.	• CMA* • Moodle Quiz*
Journal/ Log	Students can maintain a journal or a log to record reactions to topics being studied and to record personal reflections.	• Moodle Blogs • Blogs within the Mahara ePortfolio*
Recorded lectures, mini-lectures and demonstrations	Lecture material should be divided into short, readable ("chunked") sections with links to subsequent pages, if necessary. All lectures are most effective when used in combination with other instructional strategies. - PowerPoint presentations - (with audio narration is good practice for increased modality) - can be up to 5 minutes in duration but no longer than 10 minutes. A text transcript should be made available to be accessed by students with disabilities. - Podcast lectures can be chunked and up to 5 minutes in duration but no longer than 10 minutes. A text transcript should be made available to be accessed by students with disabilities. - Mini-lectures and other content can be processed so student can download them onto their cell phones or iPods in order to learn wherever and whenever they want.	• Adobe Presenter* (desktop) • Camtasia Relay* (lecture room) • Camtasia Studio* (desktop/tablet) • Wimba Podcaster* • DeC Interactive Multimedia* (pre-recorded presentations) • DeC Video* (pre-recorded presentations) • DeC Audio* (pre-recorded presentations) • Mobile learning (at the moment - research and trial phase at USQ)
Simulations	Simulations and games can be used by students so they can participate in, and learn from, processes that might otherwise be less available because of danger, expense	• Animation/ Images/ Graphics* (DeC)

	or logistical difficulties.	
Guest speakers	Experts on specific topics can be invited into the class so they can present information and/or their experiences to students. This can be done via text in the discussion board. It can also be done in the chatroom or by posting podcasts. Students will interact with the guest speaker in the discussion board by posting questions and comments.	• Moodle forums* (text only) • Wimba Voice Boards* (text and voice) • Moodle Chat* • Wimba Podcaster*
Video	Streaming video clips can be used to demonstrate procedures and to help students visualize concepts. These clips increase the modalities of learning offered to students. A text transcript should be made available to be accessed by students with disabilities.	• Audio & Video *(DeC)
Virtual field trips	Students can "attend" virtual field trips to places on web sites that are either too far away or too costly to visit in person. These field trips can be followed by activities, such as discussions.	• Open Web sites • Guided tours via Wimba Classroom* • Moodle forums *(text only) • Wimba Voice Boards* (text and voice) • Second Life*
Games	Games can be used as review activities to reinforce previously learned material and to prepare for exams. *Jeopardy!*-style games, crossword puzzles, flash cards, etc. can be created for online delivery.	• Animation/ Images/ Graphics (DeC)* • DeC Interactive multimedia*