**How can we manage student project-based learning activities in a technology-enhanced environment  to support collaboration?**

In order to keep up with rapid change and make the most of learning technologies as aids to both learning strategies, a range of practical insights based on research is provided, supplemented with a variety of examples of learning technology being infused into both strategies. The range provided is by no means exhaustive, and you may know of many more examples yourself. It is unlikely that any one student would experience all of these learning methods in a project or Problem-based Learning event, but they are provided for academics, thinking of designing new courses or remodeling courses or modules.

A separate section with examples is provided for each of the following:

* Bringing exciting curricula based on real-world projects and problems into the classroom
* Providing scaffolds, tools and resources to enhance learning
* Giving both students and teachers more opportunities for feedback, and reflection
* Expanding opportunities for student learning through collaboration and discussion With the advent of technology-rich teaching on a large scale, there are now many new opportunities for creative and innovative teaching and new relationships both with students and the shifting world of knowledge. Based on research, Figure 1 illustrates some of the practical ways that a variety of technologies have been assimilated into the learning strategies of project and Problem-based Learning.

Technology to support Project and Problem-based Learning

1. **Authentic Learning**

Audio-video resources used to stimulate learners’ prior knowledge or Introduce the project or problem or provide key resources part-way through a project or problem to sustain interest

1. **Resource based**

Different ways to electronically present course resources: -Notes to be printed -Organizer paragraph with questions: this is a cognitive learning technique that helps students orient to a lesson. It encourages the student to think about the content prior to its presentation and provides a context for the instruction -Starting with a Question, then linked to textbook with animations -Online project or problem-based case study

1. **Discussion**

Can be asynchronous or synchronous before or after each face-to-face group meeting and can take the form of an online debate presenting polemical stances on a subject or a reasoned argument with supporting evidence

1. **Reflexing**

Encourage completion of a web log or online reflective journal/diary/log to support learning for the duration of the project/problem

1. **Presentation**
2. Video conferenced presentation of work-in-progress to a guest (international) expert/other students overseas
3. **Collaboration**
4. Modelling, Simulation and Role-Playing are making use of a more sophisticated and complex world-views as information is presented and accessed via a mathematical or graphical modelling package
5. **Assessment**

Online Quiz