Pedagogy can be defined as the art of teaching. It refers to the strategies, methods and styles of instruction. The adoption of technology adds another element in course design to consider. To produce, effective online learning and teaching requires a comprehension of the processes by which students learn and interact with technology. Before new courses are created it is recommended that teachers acquire an understanding of the pedagogy which will underpin their online environment. This guide aims to provide the foundation by which teachers can comprehend the strategies for creating successful online courses.

Definition of eLearning

The Joint Information Systems Committee (JISC) defines eLearning as: ‘Learning facilitated and supported through the use of information and communications technology (ICT). eLearning includes -

- delivery of courses;
- on-line assessment;
- student to student and student to teacher communications;
- use of Internet resources;
- and other learning activities involving ICT and the Internet.’
Models of learning and teaching

Three models of learning pedagogy which have been developed specifically for eLearning are Mayes’ Conceptualisation Cycle, Laurillard’s Conversational Mode and Salmon’s E-tivities, all are significant in conceptualising levels of eLearning and online learning and teaching activities.

1. Mayes: The Conceptualisation Cycle

Mayes states that learning with technology involves a cycle of conceptualisation, construction and dialogue. In an article written by Mayes & Fowler, Mayes examines how different learning activities support students’ understanding of new concepts and the revision of erroneous concepts. This is achieved in three stages, known as the Conceptualisation Cycle.

- **Primary courseware**
  Although it is may be necessary to begin by developing primary courseware, it is important for academic staff not to stop at this stage but to continue development to the level at which higher level student learning can occur.

- **Level One eLearning (students given information)**
  At the conceptualisation stage, students are exposed to other people's ideas or concepts. For example; reading lecture notes or seeing images or videos online.

- **Level Two eLearning (students perform task)**
  At the construction stage students apply these new concepts in the performance of meaningful tasks. For example students are asked to perform a task such as answering a quiz or writing a journal online.

- **Level Three eLearning (students given feedback)**
  However, it is only at the dialogue stage, in the performance of tasks in which these new concepts are tested during conversation with tutors and peers, that learning takes place. The feedback provided enables students' erroneous conceptions to be resolved. For example when automatic feedback is given or answers are provided to a quiz or tutors give feedback to postings on a discussion board.

Mayes suggests that each of the three levels of learning activity can be supported by three different classifications of courseware, or online material intended to promote students learning, into three categories:

- **Level One.** Primary courseware is used to support, for example, online lecture notes, reading lists etc, which are a good way of giving students information.
**Level Two.** Secondary courseware supports students in performing a task. For example, computer assisted assessments in which the student is asked to answer questions. Examples of this include computer-aided assessments or online tests.

**Level Three.** It is only at the level of Tertiary Courseware where there is two-way dialogue that learning can occur. Examples include online discussions, videoconferencing and shared workspaces where feedback is extrinsic and online simulations.

It is useful to begin developing online materials at the primary level. However, Mayes stresses that focusing too much on primary courseware will not provide sufficient support for learning. In order to ensure that learners are supported at all three levels of the conceptualisation cycle, a variety of teaching methods need to be within the course design. High level learning will not take place until there is two-way dialogue (either tutor to students, peer student dialogue, or the sort of internal dialogue which may go on within a student's head). This can only take place at the tertiary level - either using courseware or face-to-face methods of learning which are integrated with technology enhanced teaching.
2. Laurillard's Conversational Model

Professor Diana Laurillard, developed a conversational model, based on earlier theories of Vygotsky, in which dialogue between tutor and student is seen as central to learning. Laurillard stresses that, for higher level learning, dialogue must take place at both a theoretical and practical level. This not only enables students to link theory with practice (which is sometimes difficult to achieve in many subjects), but also allows the tutor to evaluate whether or not he or she has set appropriate tasks for the student.

One of the major characteristics of this model is the way in which the student and tutor interacts. In face-to-face teaching, many of these interactions are so spontaneous and intuitive that they can be overlooked in the design of technology supported teaching. Therefore Laurillard made these interactions explicit. Technology can support these interactions in the following ways. It can be:

- **Narrative** - this involves the telling or imparting of knowledge to the learner

- **Communicative/discursive** - the tutor supports processes where students discuss and reflect upon their learning.

- **Interactive** - this is based on the outcome of the learning. The tutor provides feedback to students based on the outcomes of tasks students undertake in order to help consolidate learning and improve performance. In addition, the tutor uses this information to revise what learning has occurred and, if necessary, change the focus of dialogue - **adaptive**.

A full account of this theory, Laurillards' Conversational Framework, is in her book, 'Rethinking University Teaching'.
3. Gilly Salmon: 5-stage model and e-Moderating

For computer-mediated communication (CMC), Salmon has proposed a highly practical five-stage model based on her own research. The first two stages of Salmon's model focus on acclimatising the learner to the online environment and developing a supportive social environment. The third stage 'information exchange' is characterised by learners interacting with course materials and activities online and providing each other with further resources. In the fourth stage, 'knowledge construction', we see learners working collaboratively sharing ideas, posing problems and challenging each other in a spirit of enquiry. The final stage leads participants to take responsibility for and reflect on their own learning. The role of the tutor - the moderator - is essential to the design and implementation - supporting, encouraging, focusing to ensure all learners meet the intended outcomes.

Stage 1: Access and Motivation

For this first stage, it is critical that the tutor ensures that the learner can easily and quickly access the online conference, often in a VLE. Usually this will be to ensure there are no technical problems, for example, with passwords.

Stage 2: Online Socialisation

During this stage, learners need to become comfortable in the online environment and to socialise with each other.

Salmon in her book 'e-tivities' provides a number of online activities that can help new learners in the online environment become comfortable and ready to talk and collaborate online. It is essential to create an environment where learners feel respected and show respect to each other. Salmon states that this stage is over when learners have started to share a little about themselves online.

Stage 3: Information Exchange

Usually this stage of the conference is characterised by the fast and furious exchange of messages. The learner will interact with the resources in the VLE such as weblinks, databases, case studies and fellow learners. One of the issues at this stage is information overload and some learners complain about the messiness of the conference. The role of the tutor is to give some structure and to keep things organised. It is critical that the tutor does not respond to all messages at this stage but summarises and focuses the online discussions.
Stage 4: Knowledge Construction

The main focus is building an online community focusing on learning, at this juncture. The tutor will be relating messages back to concepts and theories and encouraging other learners to respond. The tutor will be summarising but also moving the group along to new subjects and topics when appropriate. At this stage, the tutor may also be sharing the leadership with learners.

Stage 5: Development

It is at this stage where we clearly see Salmon's link to constructivism. The online learners are taking responsibility for their own learning and becoming more confident and critical thinkers. The focus is on high-level learning with the tutor encouraging the learners to discuss concepts and ideas at a deeper level.

Blackboard

Blackboard the University of Manchester's virtual learning environment has a variety of features and tools to achieve high level eLearning. The challenge lies in utilising these tools in a creative manner to achieve a course design which aligns with the intended learning outcomes. Blackboard is feature rich, containing course management, communication and assessment features to enable a highly interactive on-line learning environment.

If you require more support or guidance on harnessing the tools within Blackboard contact your Faculty representative who can be accessed from www.manchester.ac.uk/elearning/.

Example of Blackboard Tools

Assessment: Quizzes, Surveys, Self Test, Submission Tool, Grading Forms, Turnitin plagiarism detection.
Organisation: Calendar, Student Grades, To do lists.
Communication: Discussion Forum, Blog, Journal, Announcements, Email.

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