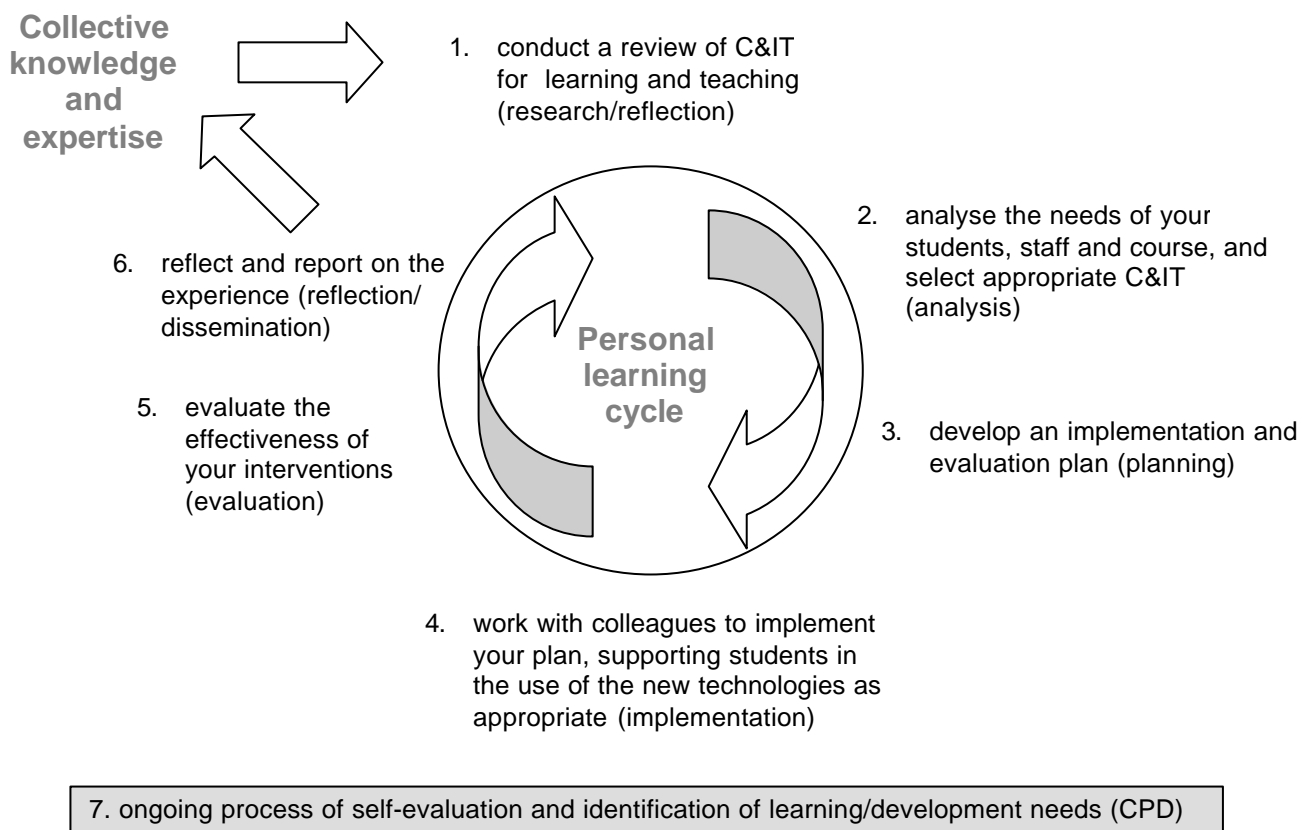


Embedding learning technologies into the curriculum

It is very difficult to generalise lessons about embedding learning technologies. As with all learning and teaching decisions, the decision as to which technologies to use with students will depend on a wide range of factors, including:

- the subject area
- the learning aims and objectives
- students' prior knowledge and skills in the subject area
- students' motivation and prior experience of learning
- specific student learning needs
- available technologies and infrastructure
- available support (for the technologies, the students, and yourself)

However, the EFFECTS/ELT learning cycle describes a general method for choosing, using and evaluating technologies in any learning and teaching context. This cycle has been shown to be effective across a wide range of subject areas, in very different UK HE institutions, and with staff at various levels of thinking about their own learning and teaching practice.



The following general lessons in curriculum development have been compiled by staff of the EFFECTS project, based on their experience of supporting staff.

1. Any technology – old or new – should be used to meet specific, pre-defined learning and teaching goals, rather than as an end in itself.
2. Teaching staff can only make effective decisions about the appropriate use of a technology once they are familiar with its use. Familiarity means not only being able to operate a particular tool or system, but understanding its specific affordances for learning and teaching, and being to apply it in the context their own students' learning needs. Acquiring familiarity-in-use has time implications for staff, and this needs to be acknowledged when introducing new technologies and planning staff development.
3. In the same way, learning sessions involving new technologies need to be planned so as to allow students time to develop familiarity with the technology. This is especially true if learning activities are to be formally assessed.
4. With over-familiarity, technologies can become 'invisible' to both staff and students. Examples would be the lecture hall and overhead projector. Over-familiarity can be as counterproductive to innovation as fear and inexperience. The point at which staff are becoming familiar with a new technology, but are not yet using it unthinkingly, is probably the point at which they are most open to thinking creatively about its use for learning and teaching.
5. Training in the use of new technologies that is not informed by an awareness of the educational opportunities, and in which staff are not encouraged to explore their potential, can lead to unthinking adoption in which effective new educational practices do not emerge.
6. EFFECTS learning outcomes 1-3 (review, analyse and plan/design), if appropriately supported, are achievable by most members of staff and provide a sound basis for embedding learning technologies into the curriculum (outcome 4).
7. At present, we have found that many staff lack the confidence, motivation and methodological tools to undertake outcomes 5-7, i.e. educational evaluation, critical reflection on practice, or writing for learning and teaching publications. There is some evidence that staff may move on to these activities in a second development 'cycle', i.e. having used a new technique or technology at least once to support student learning.
8. These 'second cycle' activities require the support of expert development staff with an understanding of evaluation and critical reflection, and an awareness of current issues in learning technology research, as well as sound knowledge of the specific affordances of new technologies for learning and teaching.
9. The main barriers to embedding of learning technologies, from a staff perspective, seem to be:
 - Lack of credible professional incentives for learning and teaching innovation (e.g. career enhancement, time off for development)
 - Time pressure and high workloads, with a perhaps exaggerated perception of the time required to become familiar with new technologies and techniques
 - Lack of confidence and experience with the relevant technologies
 - Lack of good practice models such as local mentors or relevant, high quality case studies
 - Lack of a culture of development, evaluation, action research and reflection in academic teaching and learning
 - Poor access to support staff, or a lack of support staff with the relevant technical, educational and evaluative skills
 - Lack of strategic support from institutional and (especially) departmental management
 - Status of learning technologies in relation to other local priorities (e.g. QAA, RAE, Widening Participation)
 - Change weariness and mistrust of 'new' agendas