

## **Information Technologies in Supporting Research Based Teaching and Learning.**

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<http://www.telri.ac.uk>.

The TELRI project (Technology Enhanced Learning in Research-Led Institutions) is investigating ways in which technology can be used to enhance the quality of courses in research led institutions. It is however difficult to design technological support for learning processes when it is unclear what those processes are. The project team have had to clarify the 'nature' of courses at research led institutions and investigate ways in which the 'quality' of such courses may be enhanced using C&IT. This has inevitably led to discussions regarding the relationship between research, teaching and learning. Whilst acknowledging the political nature of such discussion, the team was nevertheless required to establish some underlying educational principles which may relate to general learning processes including those associated with professional vocation based courses. Academics could relate these to their own experience of teaching in research led institutions (in terms of working practice) and also become better informed of appropriate ways of implementing effective C&IT in such courses. The importance of the assessment criteria is emphasised.

The focus has been to identify two fundamental learning processes. These have been termed 'adoptive learning' and 'adaptive learning'. Adoptive learning is undertaken by individuals when the operational context is bounded and defined and tends to be associated with closed questioning and the following of form. Adaptive learning tends to be (indeed has to be) used when the situation is open, less well defined and unfamiliar and tends to be associated with the creation of form. It is therefore more closely associated with transferable skills. This is inherently a more creative process but does encourage the student to operate higher intellectual levels in novel or unfamiliar situations. It is argued that the majority of true learning (as opposed to training) situations are of the adaptive kind. The ideas are not essentially novel, borrowing from ideas about autonomy in learning (Boud 1988), the creation of form (Khun 1981) deep and surface learning (Marton and Saljo 1976), transformative learning (Mezirow 1997) and competence and expertise (Dreyfus and Dreyfus 1986)

In making these two learning processes distinct, the TELRI team have produced a course design framework to allow academic staff to clarify the form of their course and the nature of assignments and assessment without resorting to classifications of learning outcomes. This has also allowed the technological support required for both adoptive and adaptive learning to be described with the emphasis being placed on adaptive learning support. Implementation of a variety of C&IT tools to support these educational approaches has proceeded in several courses at the University of Warwick across a range of disciplines with case studies produced.

Academic feedback seemed generally positive and indeed surprisingly positive but more so in the arts, humanities and social science fields possibly due to the tendency for the nature of such courses to be less traditional vocational training.

## References

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