Planning for Information Technology in Teaching and Learning

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The end of the 20th century finds British universities in the midst of a widespread, self-conscious process of development and promotion of new approaches to learning and teaching. Many university staff have devoted energy to these changes in the last decade or more, deploying great inventiveness and ingenuity. All of us have to some extent encountered or been confronted by new circumstances, new technologies, and new practices.

Yet it is still uncertain in what ways these innovations will alter established patterns of teaching provision and learning experience. We face this uncertainty as individual teachers and students, and as groups collected in our respective disciplines. It is also a matter that confronts policymakers across the university as a whole. It is a major challenge to direct resources so as to permit teachers and students to realise the potential of new developments in the ways that they see as most fitting.

Changes have taken three forms, sometimes related, sometimes independent of one another. There have been developments mandated by funding cuts, increases in student numbers, and by new institutional structures in Higher Education, including demands for tighter oversight and monitoring of unversities' traditional teaching activities. There have been innovations brought about by the enthusiasm of teachers and their students for exploring new ways of encouraging learning. And there have been developments prompted by the revolution in information technologies, and the availability of novel applications of these technologies to academic programmes.

University teachers continue to debate the possibilities and merits of these changes. Debate is shaped by the different pressures for change, and by our concern that we retain our independent control over what we teach and how we teach it. Innovation often seems to imply a compromise with traditional educational values, or to threaten an erosion of academic freedom and quality. Yet experience at Warwick and at a wide range of other universities demonstrates the need for us to distinguish changes brought upon us for financial, managerial, or doubtful political reasons from those that we can bring about ourselves as a genuine enhancement of our academic roles, and which enable us to retain our intellectual integrity and independence.

All of Warwick's academic departments have been involved to some extent in introducing innovative teaching practices. Many, but not all of these entail some application of new technology, or reflect the impact of newly available means and attitudes to learning, research, and the educational function. Recent innovations have varied from the use of presentational software to convey lecture notes and visual materials, to on-line tutorials, group work and conferencing, and automated assessment systems.

Many of these developments produce refinements, enhancements, or adaptations of existing practices. These will continue to be important, and commercially-available or custom-developed software will continue to be applied to "traditional" teaching and learning methods. E-mail and conferencing tools permit new forms of interaction between students and tutors, or among students themselves, intensifying or formalising contacts that previously happened intermittently or by chance. Tutors across the university will continue to adapt their courses and procedures to take advantage of such facilities, sometimes to save time and resources, more often to extend the scope of what they already offer.

Yet on two fronts we also face the implications of possible deeper changes. First, we are starting to grasp the cultural revolution implied in the explosion of computing and information technology. Each new intake of students brings higher levels of facility with the technology and its applications. This year's 18-year-olds were born at the time of the early development and spread of PCs, and have grown up with computers. They and their successors may bring new perceptions and talents

that will alter their relationships to knowledge, to teachers, and to academic programmes.

In many fields, computing technology has been an integral part of the teaching environment for decades already. In others, it has become important only quite recently, or has had only a superficial impact. But in all areas, the power and scope of new developments have altered the nature and uses of the technology; it no longer provides just analytical tools or a single set of teaching devices, but a more encompassing -- hence culturally transforming -- arena for learning.

Second, the recent phase of innovations in teaching has focused increasing attention on the means by which students learn, and the cognitive processes by which they assimilate knowledge and develop their intellectual abilities. Current terminology reflects this in its references to “learning and teaching” and to “student-centred” learning. New information technology has a role in enhancing these processes, and in matching what we offer to students’ needs. However, it can also pose potential obstacles to learning, by creating distance between students and teachers, by over-structuring intellectual encounters, or by overwhelming students with floods of “information”. We face the challenge of tailoring the facilities we provide appropriately to the needs of students and to our own academic goals.

“Research-led” universities such as Warwick have great potential to foster developments in learning and teaching because a considerable proportion of the academic provision for students is related in some way to the active research interests of staff. In a whole variety of fields, in the Humanities, Social Sciences, and Sciences, students learn by doing what academic practitioners do. Yet because our time and efforts are not directed solely towards teaching and related activities, but towards research as well, we run the risk of underemphasizing our attention to learning and teaching developments. Rewards and funding for research may be richer, and teaching innovations often require much time, experiment, and attention to detail. The challenge for institutions like ours is to find ways of supporting and encouraging the best of new teaching practice that can enhance our primary academic activities.

Academics will themselves bring about and control new developments. New practices often arise from particular needs in particular disciplines, and are not readily transferable from one to another. Institutional support for innovations has to be geared to needs at the level of individual disciplines and be responsive to demands that come from them, yet at the same time be able to help the sharing and dissemination of gained experience. And there must be means by which demand for resources at disciplinary level can be translated into the necessary action by the university as a whole.

The newly-formed Teaching and Learning Steering Group of the Information Technology Policy Committee is one vehicle that can help this happen. Consisting of academics from all faculties, and of staff from the Centre for Academic Practice and other support services, the Steering Group reports to the main Information Technology Policy Committee on needs and developments throughout the university. It helps the ITPC monitor the functions of IT Services with a view to ensuring that these reflect the needs of teachers and researchers throughout the university. The Steering Group’s role can help ensure that policy towards the allocation of resources properly fits the university’s continuing development in the 21st century, at its most important tasks -- teaching students, conducting research, and fostering students’ own development as learners and doers

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