## Keynote address

# Leading and managing the development of e-learning environments: An issue of comfort or discomfort?

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Creating or developing appropriate organisational environments and conditions to support widespread, effective use of Information and Communications Technologies (ICT) in teaching and learning has proven to be challenging for even the most generously resourced institutions. It is a complex, multi-faceted process of change requiring integrated and coherent decision making and action on the part of ALL individuals and groups within our higher education organisations.

Experience over the last decade has shown that to achieve widespread, sustainable, and effective use of ICTs in teaching and learning across an organisation, it is not good enough to rely on the efforts of local enthusiasts and processes of natural diffusion. Nor is it sufficient to provide wide ranging cash incentives; to mandate the use of ICTs in teaching and learning processes; to establish expert Centres to provide advice and technical support to individuals or organisational units; or to develop and install the complex technological infrastructure necessary to make the technology readily available to staff and students.

While each of these strategies have provided valuable impetus towards enabling individuals and groups within organisations to access and utilise ICTs in their teaching and learning processes, individually and even collectively, they fall far short of the integrated, coherent strategy that I believe experience and the research literature suggests that we need to adopt to effectively realise widespread, sustainable, and effective use of ICTs in teaching and learning across our higher education institutions.

In this paper, I will (a) identify some of the essential leadership and management challenges faced by those attempting to develop organisational environments to support the sustainable and effective use of ICTs in teaching and learning; (b) articulate a framework that might be used for leading and managing such a process; and (c) raise questions as to our individual and collective preparedness to address these challenges within higher education.

**Keywords:** leadership, management, e-learning, e-teaching, development

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## Introduction

Creating or developing appropriate organisational environments and conditions to support widespread, sustainable, and effective use of Information and Communications Technologies (ICT) in teaching and learning has proven to be challenging for even the most generously resourced institutions. It is a complex, multi-faceted process of change requiring integrated and coherent decision making and action on the part of individuals and groups at all levels of our higher education institutions.

Experience over the last decade has demonstrated (see Bates, 2000; Bates and Poole, 2003) that to achieve sustainable and effective use of ICTs in teaching and learning across an organisation, it is not good enough to rely on the efforts of local enthusiasts and processes of natural diffusion (Owens, 1987). Nor is it sufficient to:

- provide wide ranging cash incentives
- mandate the use of ICTs in teaching and learning processes
- establish expert Centres to provide advice and technical support to individuals or organisational units, develop and install the complex technological infrastructure necessary to make the technology readily available to staff and students.

While each of these strategies have provided valuable impetus towards enabling individuals and groups within organisations to access and utilise ICTs in their teaching and learning processes, individually and even collectively, they fall far short of the integrated, coherent strategies needed.

In this paper, I will (a) identify some of the essential leadership and management challenges faced by those attempting to develop organisational environments to support the sustainable and effective use of ICTs in teaching and learning; (b) articulate a framework that might be used for leading and managing such a process; and (c) raise questions as to our individual and collective preparedness to address these challenges within higher education.

Before proceeding any further, however, I must acknowledge, that this paper, like any work, draws heavily upon the ideas and experiences of many individuals from a variety of different institutions. Through my various roles as teacher, researcher, and consultant, I have had the privilege of working with, or visiting, many individuals from a range of organisational settings, who have generously shared with me their knowledge and experience of their own, and their organisations', efforts to introduce ICTs into teaching and learning. These ideas have, naturally, had a strong influence on my own understanding of the issues involved, and along with ideas gained from the research literature, have formed much of the evidentiary base for the framework for leadership and management that I describe. I must, in particular, acknowledge the contributions of my colleague Dr. Maree Gosper and the students who have participated in our program "Leading and Managing the Development of e.learning Environments", as they have provided insightful critiques of my arguments and positions on this topic. Having said this, however, I accept responsibility for the positions espoused in this paper, and encourage you to make you own critiques of these positions, based upon your own knowledge and experience.

Please note that throughout this paper I use the terms "Information and Communications Technologies (ICTs)" and "digital technologies" synonymously. Further, I embrace a broad definition of the terms "e.learning" and "e.teaching" to include any learning or teaching that utilises digital or Information and Communications Technologies to support or facilitate same. Consequently, the terms "online teaching and learning" are used synonymously with "e.learning and e.teaching".

## Developing organisational environments to support the sustainable and effective use of ICTs in teaching and learning: The nature of the problem

One of the key challenges for all leaders, managers and policy makers is to correctly define the problems with which they are confronted. As Dunn (1981) has suggested, failure to correctly define a policy or management problem can have wide ranging consequences, from the minor and inconvenient, to the catastrophic. How we define policy or management problems - the way we construct our understanding of them - largely determines the ways we attempt to solve them.

In the case of "how to develop organisational environments to support sustainable and effective use of ICTs in teaching and learning", there are clearly a range of ways in which we might interpret the problem. For the purpose of my argument, I will examine two such possibilities based upon Bolman and Deal's (2003) frameworks for organisational analysis.

### Structural interpretations

According to Bolman and Deal (2003), for those of us who interpret our organisations from a *structural* perspective, organisations are effective in realising their goals to the extent that they find a suitable fit between their structures, strategies, and the environments in which they operate. For such individuals, the structure of an organisation, or its "pattern of . . . roles and relationships, . . . can accommodate both collective goals and individual differences" (p. 45), and thus lead to productive and harmonious working environments. Six assumptions underpin this view of organisations:

1. Organisations exist to achieve established goals and objectives.
2. Organisations increase efficiency and enhance performance through specialisation and clear division of labor.
3. Appropriate forms of coordination and control ensure that diverse efforts of individuals and units mesh.

4. Organisations work best when rationality prevails over personal preferences and extraneous pressures.
5. Structures must be designed to fit an organisation's circumstances (including its goals, technology, workforce, and environment).
6. Problems and performance gaps arise from structural deficiencies and can be remedied through [rational] analysis and restructuring. (Bolman and Deal, 2003, p. 45)

For those of us who interpret the problem of "developing organisational environments to support sustainable and effective e.teaching and e.learning" as one of developing an appropriate social architecture for work, our focus is drawn to the resolution of three key issues.

*Differentiation*
The first of these concerns the question of how to *break down* the entire range of work that needs to be done to achieve this organisational goal, into individual jobs. This is the classic issue of differentiation identified by Weber (1947) and examined at length by others including Blau and Scott (1962), Thompson (1967) and Perrow (1986). Through rational analysis, juxtaposing organisational goals and strategies with the environments in which the work must be done, leaders and managers must identify the full range of tasks to be undertaken, decide how these tasks should be aggregated to form viable and interesting jobs, and who should assume responsibility for them.

In the case of developing organisational arrangements to support sustainable and effective approaches to online teaching and learning, leaders and managers must make decisions, for example, about who should be responsible for:

- the design and development of curricula
- the design of instructional resources (e.g., learning activities, assessment tasks)
- the development and maintenance of the technological infrastructure (hardware, software, networks) necessary to support the use of ICTs in teaching and learning at a whole of institution level
- supporting students and staff to effectively use the technologies available
- funding these developments.

They need to consider whether these tasks should be vested in only one group of individuals (e.g., teachers –in the case of curriculum and instructional design) or whether they should be shared amongst different groups (e.g., teachers, educational designers, and academic developers). Further, they need to consider whether these tasks should be undertaken on behalf of the elements of an organisation by a central service unit (e.g., a Centre for Flexible or Online Learning) or be devolved to each organisational element.

As one might expect, how these issues are resolved depends greatly upon the particular context in which they are addressed. Hence, many different approaches to the resolution of these issues have emerged. While relatively small institutions, comprising organisational elements with similar missions and strategies, have made decisions to centralise responsibility for many of these tasks (particularly the latter four), some large, highly differentiated institutions, have had the resources to devolve much of this responsibility to individual faculties or departments, while retaining responsibility for the development and maintenance of "enterprise level" systems at the centre.

*Integration*
The second key issue that leaders and managers need to resolve, concerns the way roles and responsibilities are integrated into work/organisational units. Mintzberg (1979) has identified six possible approaches to organisational *integration* that appear to have relevance to the development of organisational environments to support sustainable and effective e.teaching and e.learning. These include strategies that create work/organisational units on the basis of:

- the *knowledge* and *skills* required to perform particular tasks.
  (e.g., organisational units have been created by bringing together individuals/groups with specialist knowledge and skills in curriculum and instructional design)
- the *product* or *outcome* of an individual's/group's efforts.
  (e.g., organisational units have been created to assume specific responsibility for supporting the development and maintenance of web sites and online learning resources)

- the nature of an individual's or group's *customers* or *clients.*
  (e.g., central support units that have been created to support staff or students to develop the knowledge and skills necessary to effectively use ICTs in teaching and learning)
- the *location* or *place* in which individuals/groups do their work.
  (e.g., in some institutions organisational units to support staff and students to effectively utilise ICTs in teaching and learning have been consolidated in one central location forming a distinct organisational unit; in others, these services are located in faculties and/or departments, with the individuals/groups comprising them forming a loose coalition of partners in a common endeavour)
- an individual's/group's *process* or *flow of work.*
  (e.g., multi-functional central support units have been created which bring together individuals/groups to support the entire online teaching and learning process from curriculum and instructional design, through resource development, web development, development and maintenance of the Learning Management System, staff and student support, to program/project evaluation and review)
- the *time(s)* at which different tasks need to be performed.
  (e.g., Help Desks have been created in some institutions to support staff and students between the hours of 9.00am to 5.00pm since these are the institution's designated business hours. In other institutions, Help Desks have been created to operate over a 24 hour period either by rostering staff in shifts, or by developing partnerships with other institutions around the globe so that a "follow the sun" approach can be adopted.)

As with the issue of differentiation, how leaders and managers choose to integrate roles and responsibilities into work or organisational units, largely depends upon the contexts and circumstances in which these roles and responsibilities must be performed. Clearly, *these strategies are not mutually exclusive*. Individuals/groups that might be brought together to create particular products to support the use of ICTs in teaching and learning, may share the same, or similar, knowledge and skills to those who are brought together to provide advice on matters of curriculum or instructional design. Those located in central service units may have the same work flow or be engaged in similar processes of work to those in educational development units located in faculties or departments. Thus, *there is great potential for overlap of responsibilities, which can lead to conflict between individuals and organisational units, wasted effort, and unintended redundancy*. To minimise this potential, leaders and managers must resolve a third key issue associated with the design of their organisation: that of *coordination*.

*Coordination*

As Bolman and Deal (2003) have pointed out:

> Creating roles and [organisational] units yields the benefits of specialization but creates problems of *coordination* and *control* (my emphasis). . . . Successful organizations employ a variety of methods to coordinate individual and group efforts and to link local initiatives with corporation wide goals. They do this in two primary ways: *vertically*, through the formal chain of command; and *laterally*, through meetings, committees, coordinating roles, or network structures. (p.50)

*Vertical coordination* involves individuals or groups at higher levels within an organisation's hierarchy (Vice Chancellors, Deputy Vice Chancellor, Deans, Academic Senates, or university wide Teaching and Learning Committees) coordinating or controlling the work of those at lower levels (individual academics, project managers, central support units, or faculty/department based teaching and learning committees). They do this through the use of:

- *authority* - the authority they have to make decisions and direct the work of others due to their position in their organisation's hierarchy
- *rules and policies* which govern the conditions under which work can be undertaken, and specify the standard operating procedures by which tasks are to be accomplished
- *planning* and *control systems* which specify the goals and intended outcomes of work; the methods by which, and timeframes in which, work is to be completed; the measures by which work performance is to be assessed; and the methods that will be used for monitoring performance.

(Bolman and Deal, 2003, p.51).

It is not uncommon to find in many higher education institutions today, an executive level appointment, such as a Pro-Vice Chancellor (Teaching and Learning), who, amongst other things, assumes responsibility for coordinating their institution's efforts to integrate ICTs into teaching and learning. Nor

is it unusual to find strategic and operational plans for teaching and learning development, that include goals for the integration of ICTs into the curriculum. Less common, however, are performance management systems, either at the institution, faculty/department, or individual levels, that specifically focus upon the development and use of ICTs in teaching and learning. How effectively our institutions are realising their goals for the use of ICTs in teaching and learning remains, in many cases, a mystery, as does the extent to which our institutions are truly developing capacity for same.

As McDonnell and Elmore (1987) have pointed out, human beings are not predisposed to following directions. Their capacity and propensity for free will, and their interest in pursuing their own agendas, mean that mandates, such as rules and policies, if they are to be effective, must be developed with the processes of monitoring compliance in mind. This is particularly important in higher education institutions where one of the principal values underpinning the way we organise and work is that of "academic freedom". Academic staff are reluctant, indeed often stridently opposed, to "management" telling them what they can or can't do. For this reason, universities, as well as other enterprises, generally adopt a second, less formal approach to coordination known as *lateral coordination*.

This approach employs *meetings* (both formal and informal), *working parties, task forces, matrix structures* and *networked forms of organisation* (Bolman and Deal, 2003, p.53) as the means by which the activities of individuals, groups, and organisational units are coordinated. As anyone who has worked in a higher education institution knows, *meetings, working parties, and task forces,* are the "grist to the mill" of our institution's operations. They bring together individuals from a variety of different work groups and organisational units to discuss and resolve issues of institutional concern. They provide fora in which different players can:

- articulate their interests in, and contributions to, the resolution/realisation of institutional problems/goals
- learn about the interests and contributions of others
- clarify institutional goals and expectations
- identify ways in which they might benefit from, or support others
- identify and plan for possible areas of collaboration
- monitor and coordinate their own and others' performance in relation to institutional or collective goals.

They are relatively easy to establish and dissolve, and are inexpensive, since costs associated with the activities of such groups, are generally met by the organisational units from which their members hail. However, when the issues faced by such groups are complex and require (a) sustained engagement, (b) the application of dedicated resources, and (c) specialist knowledge and skills to resolve, more formal organisational arrangements are required. *Matrix structures* and *networked forms of organisation* are commonly adopted under these conditions.

Bates (2000), for example, has identified what he calls "Project Management" approaches as being both desirable, and indeed, in evidence, in higher education institutions, as a means of organising to support the development of technology based teaching and learning. This approach, calls for the development of what Burns and Stalker (1961) and Kolodny (1981) have termed "matrix structures". For each teaching development project, a team of specialists, comprising individuals from a variety of different work/functional/organisational units across an institution, is formed under a designated project manager, to plan, design, develop, implement, and institutionalise a strategy for realising a clearly defined set of goals for the use of ICTs in teaching and learning. Figure 1 outlines possible matrix structures for three different ICT based learning and teaching development projects. The "dots" in the body of the matrix associated with each project, indicate the work/functional/organisational units from which persons need to be drawn to ensure that the project team, has all the necessary knowledge and skills that it needs to realise its goals.

More formal than a working party or task force, a Project Team acts as a virtual "organisational unit" for the duration of a project. Unlike "working parties" and "task forces", but like other formal organisational units within our higher education institutions, "project teams" formed from these matrix structures have their own strategic and operational goals and strategies; they have budgets, staff, and resources allocated to them; and they are subject to the same, or similar, quality assurance and audit processes as any other

organisational unit. Members of project teams are accountable for their work performance to two different "managers" – the manager of the project and the head of their organisational unit.

**Figure 1: Examples of possible matrix structures for three ICT based teaching and learning development projects**

| | Academic Departments | | | Academic and Educational Development Units | | | Technology Development Units | | | Online Learning Support Units | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Statistics | Cultural Studies | Business | Professional Development Unit | Instructional Designers | Educational Evaluation Unit | Audio Visual Services | Web Development Unit | Learning Management Systems | Library | Numeracy Centre | Help Desk |
| Project 1 | ◆ | | | ◆ | ◆ | ◆ | | ◆ | | ◆ | ◆ | |
| Project 2 | | ◆ | | ◆ | ◆ | ◆ | ◆ | ◆ | | ◆ | | ◆ |
| Project 3 | | | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | ◆ | | ◆ |

The success of matrix structures and their resulting project teams, largely depends on the broader institution's capacity to maintain the pool of suitably qualified specialists in each of its functional/ work/organisational units. Lack of attention to recruitment and development of appropriate expertise in the functional units of our higher education institutions, can place severe restrictions on the effectiveness of this model of coordination and organisation. Consequently, if we are to rely on these structures as a valuable means of organising to support the development of ICT based approaches to teaching and learning, we must focus carefully on the ways in which we recruit staff to our institutions' functional/work/organisational units.

With the advent and increased use of ICTs in higher education workplaces, new forms of lateral coordination have become possible through the use of ICT based networks within and between institutions (Steward, 1994). Face to face meetings for sharing information, and coordinating activities, are no longer necessary, since digital networks provide members of working parties, task forces, and project teams, with opportunities to communicate and share information quickly and easily over intra/inter-nets. Individuals in one location can be working either synchronously or asynchronously with colleagues in the next office, the next building, the next state, or even overseas. Thus, problems of lateral coordination can be further reduced due to the capacity of these ICT based networks to enable workers to remain up to date with each other's thinking and progress towards common goals, in a timely way.

*Challenges for leaders and managers*

As suggested earlier, for those of us who interpret the problem of "developing organisational environments to support sustainable and effective use of ICTs in teaching and learning" as one of *developing an appropriate social architecture for work*, our focus is drawn to the resolution of three key issues:

- how to appropriately and clearly *differentiate* the roles and responsibilities that need to be undertaken to achieve our organisational goals
- how to appropriately *integrate* these roles and responsibilities into interesting and meaningful jobs
- how to appropriately *coordinate* these roles, responsibilities and jobs so that organisational goals can be realised efficiently and effectively.

But how well prepared are we as individuals, and as leaders and managers within our institutions, to make these decisions? Do we have the knowledge and experience necessary to answer these questions appropriately? If one follows the principal tenets of this approach to leading and managing, we need to formulate answers to these questions on the basis of *rational, evidence based analysis*. Further, the effectiveness of the organisational structures that we create, will be determined by the accuracy of our analysis. So what sort of knowledge and expertise do we need to do the job well?

It would be tempting to say that the task is simply a "management problem" and that all we need to resolve it is "management" knowledge and skill. This approach, however, ignores the goal for which the organisational structure is being developed: "to support *sustainable, effective use of ICTs in teaching and learning*". Before being able to make decisions about how to most appropriately organise, we need to understand what it means to *sustainably* and *effectively*:

- teach
- learn
- use ICTs to support or facilitate teaching
- use ICTs to support or facilitate learning
- develop teaching
- develop learning
- develop ICTs to support teaching
- develop ICTs to support learning
- support the development of teaching
- support the development of learning
- support the use of ICTs in teaching
- support the use of ICTs in learning.

The ways in which we understand these processes will strongly influence the decisions that we make about how best to organise to support the sustained and effective use of ICTs in teaching and learning.

For example, if we understand teaching as a process by which "experts" (the teacher) transmit or deliver "knowledge" (in the form of facts, rules, and processes which are independent of the "knower") to "novices" (students), and the role of the technologies that we use in support of teaching and learning is to ensure the efficiency and effectiveness of this process of "knowledge or content delivery", then it would be reasonable to focus our attention as leaders and managers on the development of organisational structures to facilitate and support the efficient and effective design, development, implementation and evaluation of:

- teaching and learning resources or learning objects (such as audio or video taped lectures, virtual libraries, question and answer item banks, and so on)
- learning activity management systems
- enterprise systems to enable access, and so on.

If, on the other hand, we understand knowledge to be "socially constructed", integral to the "knower", tentative, and dynamic, and formed as a result of an ongoing process of personal reflection on experience, and negotiation of the meaning of that experience with teachers, family, friends and colleagues, then the role of "teacher" and the contributions that ICTs might make to the processes of "teaching" and "learning" might be understood differently. The foci of leaders and managers in organising to support the development of sustainable and effective use of ICTs in teaching and learning might then be on the development of organisational units to support teachers and students to develop their understandings of:

- how to create learning environments that provide for and support individual and collective exploration of meaning
- how different ICTs can be used to support individual and collective exploration and construction of meaning
- how to monitor the meaning making processes adopted by individuals, and the groups in which they work, to identify areas in need of improvement, and strategies for realising these improvements.

The point here, is not to assert that either of these interpretations or approaches is the "correct" one, but to challenge us to think about the following questions:

- How well prepared are we as individuals, but more particularly, as leaders and managers, to address and resolve these organisational issues?
- To what extent do we as individuals, and to what extent do our higher education institutions, have the capacity to resolve these organisational dilemmas on the basis of a *scholarly, evidence based understanding* of: the nature of teaching and learning; the contributions that ICTs can make to teaching and learning; and the nature of effective teaching and learning development?
- How much of our current practice is based on: (a) taken for granted or untested assumptions about the nature of teaching and learning, the contributions that ICTs can make to teaching and learning, and the

nature of effective teaching and learning development; (b) the "imperative" to adopt a particular approach because our "competitors" have adopted this approach; or (c) because "this is the way that it has always been done around here"?
- Currently, how well are our institutions organised to develop a sustained, institution wide, organisational capacity to address these issues in a scholarly, evidence based way?
- Do we have enough staff with the requisite scholarly, evidence based, knowledge and skills in teaching and learning, in positions where they can guide and advise our decision making, about how best to organise our institutions to support the sustainable and effective use of ICTs in teaching and learning?

It is my contention that we are *not* always well prepared, either as mainstream staff, leaders and managers, or as institutions to address these critical questions. So I wonder: Is this a question of comfort or discomfort for us?

## Human interpretations

A second way in which leaders and managers could construct the problem of "how to develop organisational environments to support the sustainable and effective use of ICTs in teaching and learning" is as a human resource problem. According to Bolman and Deal (2003):

1. Organisations exist to serve human needs rather than the reverse.
2. People and organisations need each other. Organisations need ideas, energy, and talent; people need careers, salaries, and opportunities.
3. When the fit between individual and system is poor, one or both suffer. Individuals are exploited or exploit the organisation – or both become victims.
4. A good fit benefits both. Individuals find meaningful and satisfying work, and organisations get the talent and energy that they need to succeed. (p. 115)

For those of us who interpret the problem of "developing organisational environments to support the sustainable and effective use of ICTs in teaching and learning" as a *human resource problem*, our focus is drawn to a number of key issues.

- What is the range of *knowledge, skills, and experience* needed amongst the staff of our higher education institutions to enable them to individually and collectively contribute in constructive and efficient ways to the effective use of ICTs in teaching and learning?
- How can we effectively *recruit and select* staff with this range of knowledge, skills, and experience? Where do we find individuals with this range of knowledge, skill and experience?
- How should we *induct, manage the performance of, and professionally develop* staff involved in the support or facilitation of teaching and learning using ICTs?
- In what ways can we *recognise and reward* staff for their individual and collective efforts to utilise ICTs in their teaching programs?
- How can we *maintain organisational/work environments that motivate, inspire and enable* staff to continue to contribute their ideas, energy and talent to the realisation of their own and their institution's goals for the use of ICTs in teaching and learning?

*Recruitment and selection*
Recruitment and selection, according to Nankervis, Compton & Baird (2002), are two of the most crucial aspects of a manager's job. Finding persons with the professional knowledge, skills and experience, *as well as*, the personal and interpersonal qualities necessary to effectively fulfil the responsibilities of the positions to which you wish to appoint them, is exceedingly challenging, but never more so, than when trying to recruit and select staff to undertake responsibilities in the development of organisational environments to support the sustainable and effective use of ICTs in teaching and learning. Factors associated with the nature of the higher education sector, the economic contexts in which higher education institutions often operate, and the markets from which these individuals must be employed, make these processes particularly challenging.

*Recruiting and selecting academic staff.* While academic staff are typically expected to teach, research, and engage in some form of community outreach or service, job advertisements and selection criteria frequently focus upon the background and experience that applicants have in conducting and disseminating the findings of research. It would be rare to find job advertisements or selection criteria for

academic positions in an Australian university that do not state, that as a minimum level of qualification for such positions (particularly at Level B and above), applicants should hold a doctoral level research degree within a relevant discipline. Rarely, do job advertisements for such positions, hold such lofty expectations of applicants in relation to teaching. Evidence of prior satisfactory performance as a teacher, at either undergraduate or postgraduate level, if anything, is deemed to be sufficient.

There appears to be a widespread, though mostly unspoken belief in higher education institutions in this country (and I would suggest this belief exists in other countries as well), that while it is necessary to formally prepare for a role as a researcher in our disciplines by undertaking advanced studies in research methodology and research methods, such preparation is *not* necessary for those wishing, or needing, to assume the role of a teacher of our disciplines. Effective teaching, and teaching development, unlike research, appears to be something that everyone has the knowledge and skills to do, possibly, because it's something we've all experienced, or observed, at school or university.

Over many years, however, as a result of such thinking, the pool of individuals within the higher education sector who have the scholarly, evidence based understanding of teaching, learning, and curriculum necessary to *critically* review and revise teaching and learning programs and strategies, has remained very small.

An unfortunate consequence of this, is that much of what purports to be "innovative" in relation to teaching and curriculum design in higher education in Australia, is in fact not innovative at all. More sophisticated, perhaps, it is what Michael Fullan (1991) has described as "first order change or improvement" (p. 29) – that is, change or improvement that takes place within existing paradigms of teaching, learning or curriculum. For evidence to support this claim, one need only look at the relatively large number of CAUT, CUTSD, or AUTC funded teaching and learning development projects over the last decade that have sought to use ICTs either as a means to:

- more efficiently transmit or make information available to students, or
- replicate current practice in a virtual or online environment.

Relatively few have explored the full potential of the technologies available, to develop novel or truly innovative approaches to either teaching or learning.

Recently, however, as a result of expectations from the community for increased quality in teaching, a number of universities in Australia have begun to critically look at how they can increase the potential pool of applicants from which their future leaders in teaching, and teaching innovation, can be drawn. A proliferation of "foundations in university teaching" programs, or the more formal "postgraduate certificates in learning and teaching in higher education", has occurred. However, as yet, participation in, or completion of, such programs, remains, in the vast majority of institutions, purely voluntary. Consequently, the pool of potential individuals with the scholarly, evidenced based background in teaching and learning development, necessary to lead, manage, and envision, as well as design or develop innovative approaches to the use of ICTs in teaching and learning, remains very small.

*Recruitment and selection of technical staff*. Recruitment of IT professionals to the higher education sector, to support the development of sustainable and effective use of ICTs in teaching and learning, *has also proven to be somewhat problematic*, but for different reasons. While there are many IT professionals with the requisite IT knowledge and skills to contribute constructively to the realisation of this goal, staffing budgets, salaries, and the conditions of employment for people assuming such roles in higher education institutions are frequently *not competitive* with those for similar positions in other sectors. While market loadings have been used to try and compensate for this difference, the differential is such that the potential pool of applicants remains relatively small.

*Recruiting and selecting staff with both pedagogical and IT knowledge and skills*. Increasingly, those of us involved in developing organisational environments to support the sustained and effective use of ICTs in teaching and learning, recognise the need for individuals who have knowledge and expertise in both of these key areas – pedagogy and IT. For example, the position of "educational developer" has evolved, or been established, in many institutions, to assist academics with the design and development of ICT based instructional strategies and resources.

The evolution of such roles is, however, far from problematic. Not only is there a very small pool of individuals with both sets of knowledge and skills from which we can recruit to fill such positions, but disputes between academic staff and educational developers over the rights to the intellectual property that lies behind a particular ICT based teaching and/or learning initiative are beginning to emerge. Who has the right to claim authorship for the ideas embedded in a particular curriculum design, or instructional resource? The academic or the educational developer? And who can use these rights, as evidence of performance, or in support of applications for career advancement? These are just some of the issues that are emerging as a result of the creation of such positions. While at first glance they may seem easy enough to resolve, they raise fundamental questions about the appropriateness of our organisational strategies and job designs.

Before proceeding to employ larger numbers of such individuals, perhaps we should pause to think about why we need them? Might a better long term strategy be to build the capacity of our academic staff to resolve for themselves, as part of their teaching and learning development responsibilities, the issues for which educational developers provide support? Perhaps it's a case of developing the professional skills of our academic staff in relation to teaching?

As leaders and managers responsible for assisting our institutions/faculties/departments to develop greater capacity for widespread, sustained and effective use of ICTs in teaching and learning, how well prepared are we to:

- identify the full range of professional knowledge and skills needed to support this endeavour?
- design roles, responsibilities, and organisational relationships to enable the work that needs to be done to be effectively and efficiently achieved?
- develop strategies for increasing the pool of potential applicants with the requisite knowledge and skills to undertake the responsibilities of the positions that you wish to fill
- assess and evaluate the knowledge, skills and abilities of potential applicants? – Do you know how to assess the depth of an applicants' scholarship in teaching and/or teaching development?

I wonder? Are these questions of "comfort" or "discomfort" to us?

*Induction and professional development*
One way of trying to increase the potential pool of individuals from which you can recruit staff to lead, manage, and develop innovative approaches to teaching and learning is to "grow your own" through the provision of appropriate *pre-service* and *in service* opportunities for professional growth or development.

*Pre-Service.* While there is no universal, clearly defined, or expected pathway for developing teaching competence in higher education (as compared with the pathway for preparing to become an academic researcher), opportunities do exist for aspiring academics to develop such knowledge and skills. In the United States and Canada, and to a much lesser extent in Australia, there has been a long tradition of "Graduate Teaching Assistantships (GTAs) for those aspiring to academic positions. Under such schemes, higher degree research students (usually studying full time) have been given opportunities to develop their teaching skills by teaching classes within their disciplines while completing their research degrees. While not intended as formal preparatory programs for teaching in higher education (but rather as a way of meeting the staffing needs of their departments/faculties and/or as a way of providing opportunities for students to earn income to support their studies), these programs have served as pseudo, pre-service, teaching development programs, for many academic staff.

Recently, in efforts to address quality assurance issues related to teaching and learning, increasing numbers of institutions who have adopted this approach, offer introductory or "foundations" teaching programs to assist participants to develop their understanding of: what teaching is, what a teacher does, and how they contribute to, and support, student learning. While completion of such programs is sometimes treated as a condition of appointment to a Graduate Teaching Assistantship, participation frequently remains voluntary.

The principal weaknesses of this approach to the development of scholarly, evidence based, teaching knowledge and skills are twofold. First, while these GTA type programs provide opportunities for teaching experience, they typically provide relatively little in the way of opportunities to explore and develop, a deep, critical, scholarly and evidence based understanding of the nature, and processes, of

teaching, learning, and curriculum development. Second, due to budgetary and/or salary restrictions, higher education institutions are utilising an increased number of contract or casual teaching staff to "deliver" their academic teaching programs. Many of these individuals come from industry or professional backgrounds, rather than the research and post-doctoral backgrounds of their full time academic colleagues. Consequently, they often have not had the opportunity to participate in these GTA programs, nor the opportunity to develop much prior teaching experience.

For these individuals, and to ensure that all staff have opportunities to develop the knowledge and skills necessary to: teach, support learning, and design and develop effective and innovative curricula, higher education institutions have, for many years, offered extensive in service programs for staff with teaching responsibilities.

*In service.* In the last decade there has been a steady growth in the number of professional development programs available to staff to support their development as teachers. As suggested earlier, most higher education institutions in Australia now provide some form of "foundations program in higher education teaching and learning" for academic staff. Many offer formal postgraduate level certificates in teaching and learning. Some have even made the completion of such programs compulsory for all *new* staff. On any single day of the year in Australia, you would be hard pressed not to find a variety of professional development opportunities focused on improving some aspect of teaching or learning in higher education amongst the enormous array on offer across the sector.

However, while many opportunities for development of expertise in teaching, and teaching development, are available, participation rates are generally small, compared with the size of the potential pool of participants. Why should this be the case? I suggest a number of factors contribute to this situation. The first of these, relate to the *cultures of our institutions and of the academy*:

- the pervasive belief, mentioned earlier, that a formal preparation for teaching in higher education is not necessary, and
- the higher value that is generally placed upon research and developing one's skills as a productive researcher.

The second, relates to the ways in which professional development opportunities for staff who are interested in developing their professional knowledge and skills as teachers (or anything else for that matter) are generally organised. Despite more than twenty-five years of research evidence and advice to the contrary, professional development for staff, in many (should I say most?) higher education institutions, remains firmly based upon the provision of workshops, seminars, or tutorials, designed and "delivered" *by experts*, on topics determined *by experts*, in locations, and via methods established *by experts*. Unlike the development of research knowledge and skills, which occurs:

- in situ
- through processes of critical, scholarly, evidence based review and reflection
- under the guidance of an expert discipline specific supervisor or mentor,

the development of knowledge and skills in teaching, learning, and curriculum design and development, (including those associated with the effective use of ICTs in teaching and learning) is:

- organised as an "add on", something to be undertaken in addition to normal workload
- organised and facilitated by experts "outside" the disciplines of the participants, and
- usually without the support or guidance of an expert discipline specific mentor.

If, as leaders and managers, we are to be effective in the development of organisational environments to support sustained and effective use of ICTs in teaching and learning, we must overcome these weaknesses in our current approaches to the professional development of our teaching staff. But how well prepared are we, and our organisations, to do so?

- Do we hold a strong enough belief and commitment in the need for change?
- Do we have the requisite knowledge and skills to identify and evaluate alternative approaches?
- Are we willing to make the organisational changes necessary to ensure that our approaches to teaching, learning, and curriculum development are made more effective?

I submit, these are also possibly questions of 'comfort' or 'discomfort' for us.

*Performance management and career development*
For those who understand the problem of "developing organisational environments to support the sustainable and effective use of ICTs in teaching and learning" as a human resource management problem, a third set of issues must be addressed. These relate to (a) *managing the performance of staff* and (b) *supporting their career development.*

According to Nankervis, Compton & Baird (2002) managing the performance of staff involves far more than traditional notions of performance review and/or evaluation. Effective performance management systems recognise the "situatedness" of people's work, and assist them to:

- review their performance against clearly defined goals and levels of expected performance
- identify personal and/or institutional factors that have enabled or limited their performance
- plan and implement ways of maintaining, or where necessary, improving their performance.

Further, effective performance management systems provide institutions with opportunities to review their own organisational arrangements and work practices, to ensure that they are effectively supporting the realisation of their own, and their staff's, needs. Of particular import to the effective implementation of any performance management system, is a widespread understanding within an institution of: what "performance" means for different categories of staff, and for the organisation itself; how performance can be measured; and what type(s) of evidence can be used to demonstrate different levels of performance. For those charged with responsibility for evaluating the performance of staff who are responsible for effectively utilising ICTs in support of teaching and learning, the key issues become:

- What does "effective use of ICTs in teaching and learning" mean:
  - an ability to identify a teaching or learning need?
  - an ability to envision how ICTs might provide a means of addressing this need?
  - an ability to provide an educationally sound, evidence based rationale for the use of ICTs to address this need?
  - an ability to design and develop curricula, instructional activities and resources, assessment and feedback strategies, learning support resources that are educationally sound and effectively use ICTs?
  - an ability to lead and manage a teaching development project team comprising a combination of academic, technical and support staff?
  - an ability to use the technology effectively and in the manner(s) intended in the educational design of the program/unit/lecture/seminar in which it is being used?
  - an ability to assist others to develop the knowledge and skills that they need to be able to utilise the technology effectively and in a manner consistent with identified educational objectives?
  - an ability to appropriately evaluate the effectiveness the technology in making its intended contribution to teaching and/or learning?
  - an ability to disseminate the results of their evaluations of the use of ICTs in teaching and learning to others in meaningful ways?
  - all of the above?
- What evidence might one provide/look for to support an argument for "effective use of ICTs in teaching and learning"?
- How might one evaluate this evidence?

Few higher education institutions, in my experience, have resolved these issues in any systematic way. Performance management, and career development, generally, but in relation to teaching in particular, remains in the "too hard basket". Supervisors or heads of department dread it, staff resent having to go through it, particularly when they believe that their supervisors lack credibility in being able to comment appropriately upon their work. Perceptions of a lack scholarly expertise in teaching amongst all staff, but particularly those in leadership, management or supervisory roles in higher education, have had a major impact on the success of such processes. Why would, or should, staff accept others' perceptions of their teaching, when they believe, or know, that these individuals have little credible scholarly basis for making such assessments? Would we be disposed to amateur or uninformed assessments of our research?

This is an issue that is *not* going to go away. At the institutional level, at least in the short term, it is an issue that is going to grow in significance in Australia, as the federal government moves to implement its performance based funding model for learning and teaching (the so called Learning and Teaching Performance Fund). As has happened with previous rounds of external assessment of institutional

performance, higher education institutions will undoubtedly endeavour to "gear up" for this process by establishing or strengthening internal processes and cultures of performance management and review. Some may go as far as to introduce their own, performance based, funding models for faculties and departments to mirror this process and experience.

Regardless of our institutions' responses, how well prepared are we, as individuals and as institutions, to manage the performance of our staff, particularly as it relates to the effective use of ICTs in teaching and learning? How well prepared are we to:

- define or identify "effective" use of ICTs in teaching and learning?
- define or identify valid and reliable evidence that might be provided, or looked for, to support arguments for "effective use of ICTs in teaching and learning"?
- identify means by which we might evaluate this evidence?

Would we be credible in providing our colleagues with opinions and advice about their teaching and learning, or the effectiveness of their approaches to the use of ICTs in teaching and learning?

Is this an issue of "comfort" or "discomfort" for us?

*Recognition and compensation*

One of the key issues that must be addressed in the higher education sector in Australia, if we are to truly realise our goals for teaching and learning, is to raise the status of teaching within the academy and within the community. An important step towards achieving such a change, will be to develop and implement appropriate career pathways, for those who wish to focus upon, or give emphasis to, teaching within their academic careers. In research, these are clearly established within most institutions, with well defined levels, and measures of performance, linked directly to each of the standard levels of academic appointment: Associate Lecturer, Lecturer, Senior Lecturer, Associate Professor, and Professor. While the particulars may vary between disciplines and institutions, the involvement of external assessors, of both research outcomes and applications for promotion, helps to ensure comparable standards are maintained across the sector.

The situation is less clear for teaching. While much has been done within individual institutions (or in some cases, groups of like institutions) to define teaching and levels and measures of performance, descriptions of teaching vary markedly between institutions, as do: expectations of performance, the measures and methods of assessing performance, and the ways of documenting same. The new Carrick Institute for Learning and Teaching in Higher Education could do far worse than to make one of its first strategic priorities, to lead a national process of scholarly, evidence based debate about the nature of university teaching (including teaching that utilises ICTs), for the purpose of determining a common framework for policymaking, assessment, and measurement across the Australian higher education sector.

The lack of any formal, or systematic feedback, from supervisors or peers, on performance in teaching or teaching development, was one of the principal reasons, offered by focus groups participants, in an evaluation of teaching development strategies, in one Australian higher education institution, for not putting much time into either teaching or teaching development (Marshall, et.al., 2004). As one participant suggested:

> Why would you devote much time to teaching or to getting these [teaching development] grants? They take as long to write as ARCs and have about the same miserable success rate. Why would you bother? . . . I've been told by my head of department that I shouldn't waste my time. That it's a distraction from my real work . . . my research. He even said it could be detrimental to my career. So when you hear that . . .why would you do it. Why would you make it a priority?

While this is an issue that pertains to teaching generally, it has particular significance for staff and institutions who wish to develop ICT based teaching and learning strategies. For as we know, while the use of ICT based teaching and learning resources may lead to efficiencies in the processes of teaching and learning, they require considerable time and effort to develop. If we are to engage more staff in the processes of planning, developing, utilising, and evaluating the use of ICTs in teaching and learning, then we must address this crucial issue of how to recognise and value *teaching* and *teaching development* in our institutions, and our sector of employment.

A second important and related issue, is that of how to appropriately compensate staff for their work in developing and utilising ICTs in teaching and learning. Approaches to compensation, according to Nankervis, Compton & Baird (2002) can involve direct methods such as salaries and wages, but also a range of indirect methods that can enhance the work experience for staff. From studies of academic staff in higher education institutions in Australia and overseas, (see for example, Boyer, Altbach, and Whitelaw, 1994; McInnis, 1996) we know that while a fair salary is important to academic staff, a range of other factors are equally, if not more, important. One of the key challenges for those wishing to establish organisational environments to support the sustainable and effective use of ICTs in teaching and learning, will be to examine these factors, and develop approaches to compensating staff that recognise and reward them *in forms that they value*, not just for doing their job, but for doing it well. Compensation packages might be made up of salaries, leave, and other traditional elements, but time, resources, and additional personnel to support them in their work, might also be made available. The lack of flexibility and creativity in many existing approaches to compensation (often due to restrictions placed upon them by enterprise agreements) render them less effective than they otherwise might be, as policy instruments to encourage and support change and innovation in teaching.

The question needs to be raised again: How well prepared are we to develop and implement new, innovative approaches to recognising and rewarding performance in the effective use of ICTs in teaching and learning?

- Do we have a sufficiently well developed understanding of the factors that motivate staff to high levels of performance, to be able to use these to guide the development of new recognition and reward processes?
- Do we have the necessary knowledge and skills to influence the relevant industrial bodies to ensure that we can create the legal frameworks necessary to implement these new approaches or recognising and rewarding staff?
- To what extent is this an area of our own, and our institutions' performance, that must be developed?

Issues of "comfort" or "discomfort"?

### The need for multi-dimensional interpretations and solutions

To explore other possible interpretations of this problem (e.g., political, cultural, financial, technological) would be to "use a sledge hammer to drive a nail". Suffice to say, the problem of developing organisational environments to support sustainable and effective use of ICTs in teaching and learning *is complex* and *will require a multi-dimensional approach* to its resolution. No single interpretation of the problem, or the strategies that subsequently flow from it, will suffice.

As leaders and managers, and therefore major determinants of, and contributors to, the strategies that will be used to resolve this issue within our organisations, we will need to engage in what Bolman and Deal (2003) have described as the art of "reframing". The essence of "reframing" is examining a problem or situation from multiple perspectives, to gain as many insights into the nature of, and possible solutions to, a problem, as possible. By examining a problem from many different perspectives, we are able to develop:

- a deeper understanding of the nature of the issue or issues that need to be addressed if the problem is to be resolved
- a deeper appreciation of the potential value of different options for addressing these issues
- insight as to how we might use strategies informed by one interpretation of the problem, to address issues identified through a different interpretation of the same problem.

However, possessing greater insight into the nature of a problem, or the strategies that might be used for resolving same, is necessary, but insufficient, when it comes to resolving complex organisational problems, such as the problem that is the focus of this paper.

In the following section of this paper, I propose a framework for leading and managing the development of organisational environments to support sustainable and effective use of ICTs in teaching and learning.

In doing so, I will provide a rationale for each of the essential elements, and provide examples of how our intentions can go unrealised, unless we pay attention to each of the elements described.

## Developing organisational environments to support sustainable and effective use of ICTs in teaching and learning: A framework for leading and managing the process

The thinking behind the framework that I offer here, has been nicely captured by Fullan (2001), one of the world's leading authorities on educational innovation and change, when he argued in relation to large scale, lasting reform, that:

> . . . existing strategies will not get us to where we need to go. . . . The answer to large scale reform is not to try to emulate the characteristics of the minority who are getting somewhere *under the present conditions*; if the conditions stay the same we will always have only a minority who can persist (for short periods of time) against many odds. Rather we must change existing conditions so that it is *normal* and *possible* for a *majority* of people to move forward. (p. 268, emphasis added)

I'm sure that we can all testify to the fact that developing organisational environments to support sustained and effective use of ICTs in teaching and learning, does not call for minor or insubstantial changes to our organisations.

Our early efforts to encourage and support enthusiasts to experiment and adopt these new technologies in their teaching, by providing them with funds to support their developmental initiatives, fell far short of the mark of assisting our organisations to adopt these technologies more broadly. Our efforts to develop central support structures to facilitate and enable this developmental process, have also proven to be less effective than many of us would have liked.

For those individuals and groups who identified a need, or had a desire to explore the ways in which these technologies might be used to support teaching and learning, these strategies have undoubtedly proven to be invaluable to their efforts (Marshall, et.al., 2004). But how effective have they been in developing widespread capacity within our institutions? That is to say, how effective have they been in developing the capacities of individuals, faculties, or departments across our institutions to:

- identify, *for themselves,* a teaching and learning need that might be addressed utilising an ICT based solution?
- develop, *for themselves,* a vision and plan for utilising ICTs to address this need?
- design and develop, *for themselves,* a curriculum framework that is theoretically sound and coherent with the practical realities of the environments in which teaching and learning will take place ?
- design, and perhaps even develop, *for themselves,* effective ICT based teaching and learning resources to be utilised in these frameworks?

Unfortunately, I believe the truthful answer to these questions is "not very effective" – a position of discomfort for many of us. The particular combination of policy instruments (*inducements* in the form of grants to support development, and *dissemination strategies* - in the form of advice, information, and assistance on how to . . .) are designed to deliver short term and isolated gains (McDonnell & Elmore, 1987). What is needed, to effect the sort of widespread organisational change necessary to support *sustained* and *effective* use of ICTs in teaching and learning, is a combination of these, and the *capacity building* and *system changing* strategies advocated by Fullan (2001) and McDonnell and Elmore (1987).

But how can we, as leaders and managers of change within our institutions, ensure that our efforts will be effective? I propose a *framework of seven guiding principles* for leading and managing such a process, that experience, and research, suggest might assist.

*1. Be sure to keep the real issue that you need to address central to your efforts.*

Developing sustained organisational capacity to effectively utilise ICTs in teaching and learning is primarily a problem of *developing and maintaining the knowledge and capacities of staff.* The effectiveness of the strategies that an organisation employs in teaching, and supporting student learning,

will depend more upon the *knowledge, skills and abilities of its staff* to conceive of effective strategies, than on the quality of its resources, or teaching and learning infrastructure.

While not denying the importance of the latter (indeed I will return to discuss them shortly), without *leaders, managers, teachers, and support staff* who have a *deep, scholarly, evidence based understanding of learning, teaching and the process of curriculum development*, institutions run the risk of developing policies, practices, and support structures around teaching and learning that at best *replicate the taken for granted*, or at worst, *limit, rather than enhance, student learning*.

The central issue for leaders and managers attempting to develop organisational environments to support sustained and effective use of ICTs in support of teaching and learning is to ensure that their institutions *develop* and *maintain* a capacity amongst their staff, *at all levels*, and *in all organisational units*, to *draw upon scholarly, evidence based understandings of teaching, learning, and curriculum development*, to address substantial problems related to the development of policy and practice in teaching and learning.

*2. Be sure to adopt a whole of enterprise approach to the resolution of the problem.*

In addition to the development of staff, development will be needed in a number of other key areas, including, but not limited to:

- organisational structures
- policy and planning processes for teaching and learning development
- curriculum frameworks
- teaching support services for staff
- learning support services for students
- the technological infrastructure to support teaching and learning (including enterprise level systems)
- financial management strategies
- space management strategies
- human resource management strategies
- organisational culture.

What is essential here, is that the *development undertaken in of each of these areas, be undertaken in a coherent way*, and be informed by a *shared vision* or understanding of what the institution, as a whole, expects in relation to the use of ICTs in support of teaching and learning. (For more about the processes that can be used to develop visions to guide the development of technology assisted teaching and learning at institutional, faculty, and departmental levels, see Bates, 2000).

*3. Be sure to cast this problem as a problem of the institution, its faculties/departments, and staff.*

Adopt a whole of institution approach. Each of the areas of development outlined in 2 above, need to be addressed at the institutional, faculty and departmental levels. Assist the staff of your organisation to understand:

- why this is a whole of organisation problem
- what the implications for change and development are likely to be for the institution and each of its work/organisational units
- how they (individually and collectively) will be expected, and need, to change and develop their current practice.

Establish clearly defined accountability frameworks for the development of institutional, faculty, departmental, and individual capacity to effectively utilise ICTs in teaching and learning. Embed these in annual cycles of performance review at each of these levels.

*4. Ensure that your institution as a whole, and each of its organisational units, operate effectively as "learning organisations".*

As Fullan (2001) has exhorted, "make the notion of a learning organisation more than a cliché" in your institution (p. 269). Organisational improvement or development is a function of "learning to do the right thing *in the setting where you work*" (Elmore, 2000, p. 25). Encourage and develop the individual and collective capacities of your staff, within and across organisational units, to create and disseminate the organisational knowledge necessary, to effectively realise the goal of widespread, sustainable and

effective use of ICTs in support of teaching and learning. The process is not new to academic staff, although the foci (teaching, learning, and organisational development to support same) may be.

The benefits of such an approach are many, but three particular advantages are worth mentioning here. This approach:

- empowers and enables staff by putting control of the processes for (a) identifying the need for change or development; (b) planning and implementing strategies for change and development ; and (c) reviewing performance and effectiveness in realising the intended outcomes of the change or development, into the hands of those closest to the need for development or change
- ensures that processes of teaching and learning development (like research development) are directly integrated into the routine work of staff and their organisational units (an not seen as an add on to normal workload)
- ensures that individuals and organisational units develop the knowledge and capacity to become increasingly self sufficient in identifying and resolving problems related to teaching and learning in general, and e.teaching and e.learning in particular.

As Fullan (2001) has pointed out "no amount of outside intervention can produce the motivation and specificity of best solutions for every setting" (p. 270). So before we adopt our normative approaches to obtaining the expertise that we need to solve these organisational problems by recruiting "experts" from outside our institutions, we should pause to consider, if we might not be better to adopt a different strategy of recruiting from, or developing capacity, within.

5. *Base your decisions, policies, and practices on critical, scholarly, evidence based, multi-dimensional analyses and NOT taken for granted untested assumptions, values and beliefs about:*

    - teaching
    - learning
    - the contributions that ICTs can make to teaching
    - the contributions that ICTs can make to learning
    - the best ways to develop teaching
    - the best ways to develop learning
    - the best ways to support the development of teaching
    - the best ways to support the development of learning
    - the best ways to support the use of ICTs in teaching
    - the best ways to support the use of ICTs in learning.

As leaders and managers of teaching and learning development (including the development of e.teaching and e.learning), we need to be confident in the validity and reliability of our actions and decisions. The test here is not just the appropriateness of the processes by which our decisions or actions are taken, but equally as important, is the veracity of the knowledge base (in this case in relation to teaching, learning, and curriculum development) that informs these decisions and actions. It is important that we problematise the issues that confront us, and individually and collectively, adopt a critical, scholarly evidence based approach to the resolution of these issues. As I have discussed elsewhere (Marshall, 2003), we can ensure that we engage in such a critical, scholarly, evidence based approach, by adopting a simple four stage process of analysis, that involves:

- describing our current practice
- articulating the assumptions, values and beliefs that inform this practice
- using evidence based, scholarly, research literature in the domain(s) of interest to assess the appropriateness of these assumptions, values, and beliefs
- reconstructing our assumptions, values, beliefs and practices, in light of this critical reflection, to ensure that they cohere with the evidence based knowledge provided in the literature.

6. *Use a range of policy instruments that provide both the short term results expected by stakeholders and the long term sustainable capacity for effectively using ICTs in teaching and learning.*

Developing organisational environments to support the sustainable and effective use of ICTs in teaching and learning is a *long term, on going process*. Many stakeholders, both internally and externally (particularly those providing the funds and resources to facilitate and support these processes), will become frustrated and disillusioned by the slow rate of progress. But what must be kept in mind, by those

of us responsible for leading and managing the process, is that we are engaged in a *process of cultural change*. Not only do we have to change the "artifacts" of our organisations (e.g., our structures, strategies, policies, and technologies, related to teaching and learning), we must also change the "value" that we place on teaching and teaching development, and the "basic assumptions" that we hold regarding the nature of teaching, learning, technology, curriculum and so on (see the list in 2 above). Such a process, according to Fullan (2001) and McDonnell and Elmore (1987) will require the use of a combination of policy instruments:

- those designed to provide the short term "wins" that stakeholders will be expecting, and need, to remain motivated and committed to the process of change (e.g., mandates, inducements, or dissemination strategies), as well as
- those designed to effect the desired long term changes in our institutions (e.g., capacity building and system changing strategies).

Mandates, inducements and dissemination strategies are often associated with "standards based reforms". They (a) articulate short term goals for achievement (including definitions of expected outcomes and methods for measuring their achievement), (b) provide cash and other incentives to encourage individuals and/or organisational units to pursue the desired goal(s), and (c) information and/or training to assist those who wish to take up the challenge. Performance is measure against the designated standards, and appropriate rewards offered in recognition of different levels of performance. They are an effective means of stimulating interest and activity in an area of desired development. However, as these strategies begin to achieve results, it is necessary to shift to "capacity building" and/or "systems changing" strategies including developing new approaches to the professional preparation of academic staff; changing the ways in which we define an academic career to make teaching only, or teaching focused positions possible; and relocating the responsibility for the development of e.teaching and e.learning from the early adopters, or the "Centres for OnLine Learning", to the faculties, departments and other organisational units comprising our higher education institutions.

7. *Develop policies, strategies, and organisational cultures that are coherent and mutually support one another rather than compete, undermine or limit each others' effectiveness.*

One of the major weaknesses of our efforts so far to develop widespread, sustainable and effective use of ICTs in teaching and learning, is the lack of coherence between (a) our goals, policies, and strategies for e.teaching and e.learning and (b) the artifacts, values, and beliefs inherent in the organisational cultures that guide, and often determine, the ways in which people understand and behave within our institutions. For example, the dissonance between (a) our articulated goal for staff to focus on the development of their teaching, or in the current case, on developing the capacity to effectively utilise ICTs in teaching and the support of learning, and (b) the tangible artifacts (policies, practices, and structures) of our institutions that lead staff to firmly believe that time spent on research and developing research productivity is *much* more highly valued, and likely to lead more readily to career advancement.

If we are to be more effective in our efforts to develop organisational environments to support sustainable and effective use of ICTs in teaching and learning, we *must* ensure that we address these incongruencies.

## Conclusion

I am not naïve enough to think that my list of seven principles for leading and managing the development of organisational environments to support sustainable and effective use of ICTs in teaching and learning will provide a panacea for the complex range of issues that must be addressed to effectively realise this goal. However, I believe, based on my own and others' research and experience, that they provide some valuable guidelines to the issues and challenges that we face, and to possible approaches that we might adopt, to addressing these issues.

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