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Publication details:

Exploring the frontiers of e-learning: borders, outposts and migration. Research Proceedings of the 12th Association for Learning Technology Conference (ALTC-2005)
pp. 118-129
0-9545870-4-9 (ISBN)

Event details:

ALT-C 2005: exploring the frontiers of e-learning - borders, outposts and migration
Manchester, UK

Publication Date:

2005

DOI:

<https://doi.org/10.26190/unsworks/473>

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**The Innovative Teaching and Educational Technology (ITET)
Fellowship: cultivating communities of practice in learning and
teaching**

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Abstract

In this paper we describe an institutionally funded Fellowship running 2001–2004, which seeded and cultivated new communities of practice in innovative teaching using educational technology. The literature identifies some inherent challenges in such schemes. The Fellowship was able to surface and deal with these through a team-based action research approach. Key features were the buying out of staff time for a semester and the development of discipline-based projects in a supported cross-disciplinary group. The Fellowship has been central to shifting systemic institutional blocks to educational innovation.

Introduction

In the University of New South Wales (UNSW), a strategic institutional initiative to sponsor and support communities of practice around innovative use of educational technology began in 2001 – the Innovative Teaching and Educational Technology Fellowships (ITET). The initiative sought to enhance learning and teaching quality across the institution, not just by funding individual innovative teaching projects but also by building systemic links across disciplinary and departmental boundaries. This paper reports on action research in which four successive institutionally funded Fellowship programmes were evaluated and redesigned; and on what was learnt from this about the challenges inherent in such initiatives.

Background and context

UNSW is large campus-based university, keen to improve the student learning experience. However, the well established institutional focus on research makes it hard for staff to prioritise teaching. Since 2001, the University has been addressing this through building communities of practice in learning and teaching. A key component of this strategy has been a Fellowship in Innovative Teaching and Educational Technology. Between 2001 and 2004, institutional strategic funding allowed four groups of Fellows to take six months away from other work to develop innovative their teaching with educational technology.

Online learning and teaching quality

Research-focused universities in Australia are under increasing government pressure to improve teaching quality. The introduction of online learning is seen as an opportunity to review and transform traditional university teaching practices (Nelson, 2002a, 2002d) – a catalyst, for improving the student experience overall. Online learning resources have the potential to be adapted and re-used by others, peer-reviewed and published. This could help to shift university teaching towards being an organised and community-led scholarly activity, rather than being a private matter between individual teachers and their students.

US studies have shown that for many younger students, computers are not 'technology' but are just part of their lives. They are connected, used to multitasking and collaboration, and prefer experiential learning. There is an imbalance between their expectations and the learning environments they find in universities (Oblinger, 2003). There is no reason to suppose that UNSW students are significantly different in this respect from those in the US.

In many of the disciplines in which UNSW is particularly strong, information technology is an integral part of disciplinary knowledge. In these disciplines, education without technology,

on- campus or off- campus, is already inconceivable. Innovative high quality teaching at UNSW therefore must include appropriate and innovative use of educational technologies.

A report on a survey of online learning in Australian universities carried out in December 2001 concluded that 54% already had fully online components in their offerings, and the rest all had some form of online learning. Quality, cost-effectiveness and pedagogy have been major concerns (Bell, Bush, Nicholson, O'Brien, & Tran, 2002).

The transformation required is not just about developing the technical skills of teachers. Sponsoring individual educational technology projects has had limited impact (Alexander, McKenzie, & Kershner, 1998). It also requires empathetic support for the development of reflective practice and teamwork in teaching (Torrise & Davis, 2000).

Literature

The literature on higher education and on organizational development offers some insights into the challenges in transforming university teaching.

Surfacing educational beliefs and practices

University classroom teaching in Australia has traditionally been regarded as a private matter between the teacher and the students. A critical review of research on teaching beliefs and practices among university academics identifies a need to make explicit links between espoused theories and teaching practice; assuming that teaching is done by an individual in the classroom (Kane, Sandretto, & Heath, 2002). Another literature review notes that, while team teaching has tangible benefits for student learning, there are concerns about control. More support for teamwork among teachers is needed (Letterman & Dugan, 2004). The need to move from a person culture to a role culture was described as a significant challenge when introducing new learning technologies in one Australian university (Laurillard & Margitson, 1997).

Research on classroom teaching in schools shows a tension between conscious planning based on cognition, and intuitive responses based on experience (Atkinson & Claxton, 2000) – even where a common teacher training system could provide some shared language through which to articulate teaching strategies.

The original idea of the reflective professional practitioner, who is able to articulate and share learning from experience, seems to offer a model for incorporating both the tacit and the explicit in the development of university teaching practice (Schön, 1983). However, Schön himself notes some dissonance between reflective practice and scholarly enquiry which places greater value on the conceptual than on the experiential (Schön, 1983; Schön, 1987). This may be a reason why much of the experiential knowledge about university teaching remains unacknowledged, and tacit.

Case studies from the United States indicate that it is possible to establish the scholarly credibility of teaching using the same criteria that are used in academic research; such as peer review, publications and explicit theory. But this takes long-term planning and a great deal of tenacity to put into practice in a real university (Huber, 2004).

The role of tacit and codified knowledge in adoption of new medical technologies has been a subject of management research in Harvard Business School. Codified knowledge – in the form of research papers and conferences, policy or guidelines – is more easily transferred. It allows managers to predict and plan. However when technologies are new, only later adopters are likely to benefit from codified knowledge. Where a community is not sensitive to tacit knowledge (as with some surgeons and perhaps also university teachers) and where codified

knowledge is weak, then innovative technologies may fail to realise their potential (Edmondson, Winslow, Bohmer, & Pisano, 2003).

The knowledge that university teachers have about learning in their discipline is likely to include tacit knowledge based on their own individual experiences as a learner and teacher, including some of the ‘troublesome’ concepts referred to by Meyer and Land (2002). Writers on educational technology often explicitly promote a cognitive constructivist perspective – for example (Jonassen, Mayes, & McAleese, 1993). Applied to staff development in university teaching this would imply that we acknowledge and respond to teachers’ experiences, rather than simply require that they abandon their previous views in favour of a new orthodoxy.

Trowler & Cooper, (2002) describe a framework for understanding the difficulties in putting this into practice – the concept of ‘Teaching and Learning Regimes’ (TLRs) in academic disciplines. Each TLR has its own interlinked system of values, relationships, practices and assumptions that may clash with those of the educational developers running the programme. Simply expecting academics to adapt to an educational developers’ regime is not enough. Participants need encouragement to become aware of their preconceptions, the social roots in their disciplines, and any incongruities between ‘espoused theory’ and ‘theory in action’.

The challenge is to steer a course that avoids both promoting a rigid preferred model, and the opposite extreme of anxiety due to lack of clear guidelines, with no use of codified knowledge.

Organizational learning and communities of practice in universities

Senge’s books on the learning organisation deal in some detail with the individual learning processes of managers and change agents (Senge et al., 1999; Senge, Kleiner, Roberts, Ross, & Smith, 1994), and offer guidance on how to develop this in an organisational context.

Barriers to becoming a learning organisation include blame culture, lack of a teamwork and sharing ethos, imposition rather than emergence, no roll-out of knowledge gained (Hodgkinson, 2000). Within universities, disciplinary diversity is likely to exacerbate these barriers, as is the tacit and individual nature of much of the knowledge about disciplinary teaching. Cullen applies Vygotsky’s social constructivist perspective to Senge’s learning organization – and comments that universities in Australia and New Zealand are often ‘taking on much of the language and philosophy of bureaucratic organisational models that are incompatible with the criteria of a community of learners’ (Cullen, 1999).

However, bureaucratic definitions of work can misrepresent what is actually happening on the ground (Brown & Duguid, 1991). In academia, the formal systems may be less significant for learning and innovation than ‘what happens in activity systems and the cultures created in communities of practice’ (Trowler & Knight, 2000). There are examples in the private sector where networks that create, share and manage knowledge operate across organisational boundaries (Wenger, McDermott, & Snyder, 2002). In universities, collegial sharing of discipline-based research might also be said to constitute such communities, and in a research-focused university such as UNSW, these communities may be in alignment with at least some of the formal systems. The challenge is in offering effective institutional support where there is no such tradition – for cross-disciplinary communities of those interested in innovative learning and teaching with educational technology.

The ITET Fellowship

The four ITET programmes were funded as a strategic initiative to address teaching quality as a key success factor for the university. The Fellowship was designed as a high-leverage

process, in that the Fellows are expected not only to change their own teaching, but also to promote departmental and institutional change. Their time is bought out from other duties so that they can attend workshops together and work on a project with the support of educational and media development staff, away from their usual departmental environment. The ITET management team includes the Pro Vice Chancellor, staff from the Educational Development and Technology Centre (EDTeC), staff from the Learning and Teaching Unit, and a consultant in organizational behaviour.

Rather than a focus on institutional reward systems and the role of the manager in motivating and inspiring staff to accept change, e.g. (Ramsden, 1998), UNSW has adopted some of the characteristics of the an ‘interactional leadership’ model for higher education advocated by Knight & Trowler (2000). UNSW’s overall approach is illustrated in Figure 1.

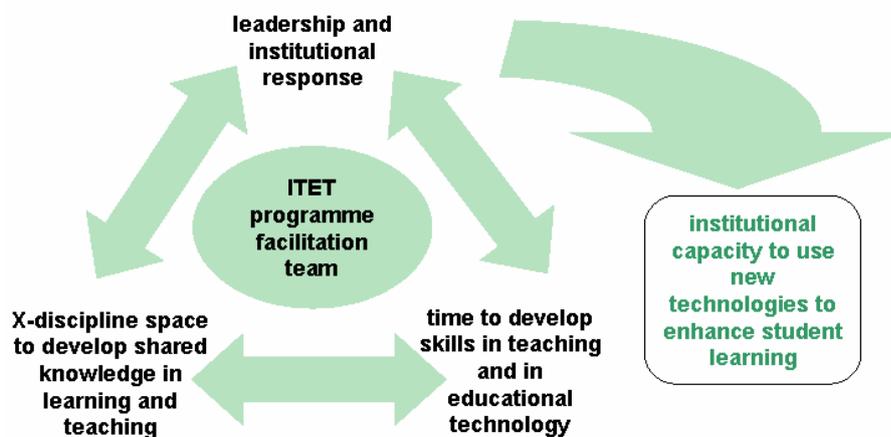


Figure 1. The ITET Fellowship as a strategy for organizational change

ITET as action research

The Fellowship programmes have been run as an action research project, in that an evaluation of each programme has informed subsequent programmes; more rigorously so with later programmes as key issues emerged. The process is like that used in other examples of action research in higher education – a series of cycles of running an educational process, monitoring and then evaluating it to inform redesign for the next cohort of participants (Zuber-Skerrit, 1992). In this case there were external changes as well as evaluation to take into account. Figure 2 summarises the development of the Fellowship programmes and shows some of the strategic environmental influences during this period.

When the Fellowship began in 2001, UNSW had volunteered to take part in a pilot of the new Australian Universities Quality Agency (AUQA) audit process. The AUQA pilot report commended the ITET initiative and suggested that it required more thorough evaluation. In 2002, several government policy/discussion documents on higher education were released, several of which specifically addressed educational technology (Nelson, 2002a, 2002b, 2002c, 2002d; NOIE, 2002). In 2003, the creation of a National Institute for Learning and Teaching in Higher Education was announced.

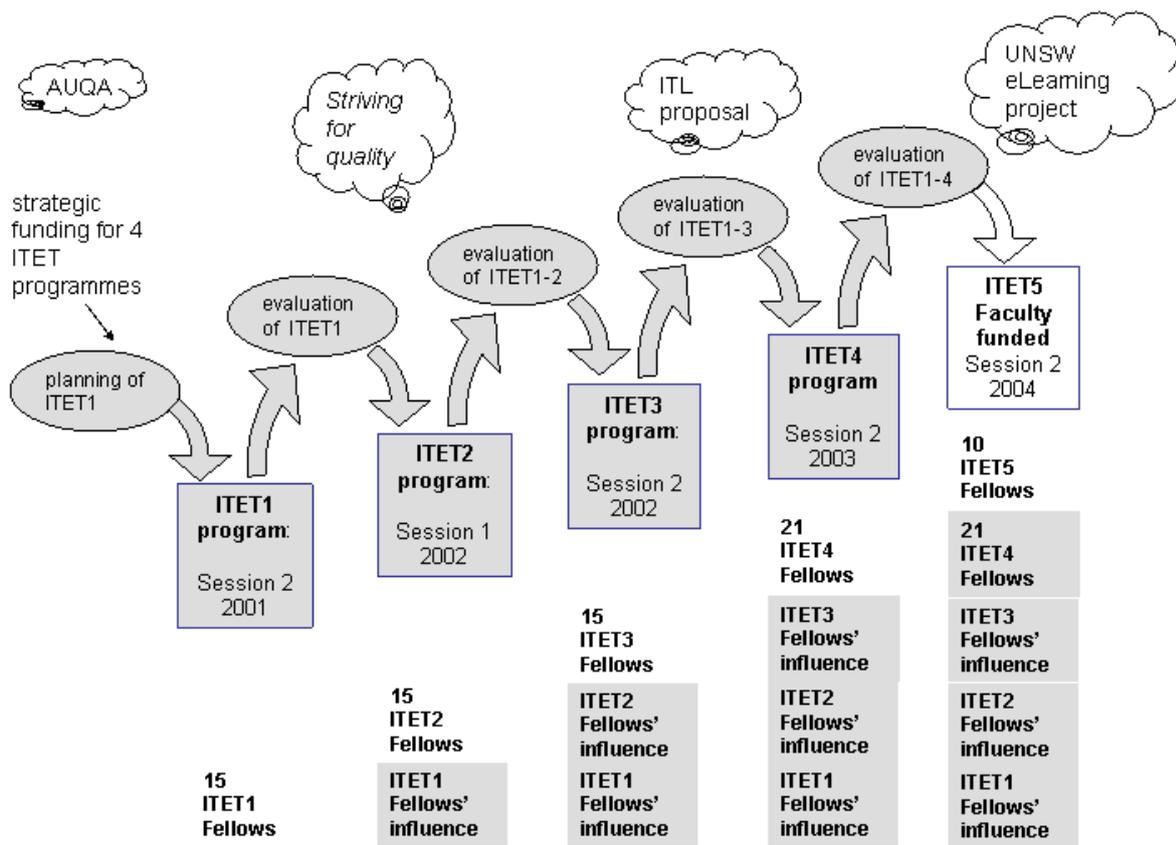


Figure 2. The ITET project as action research

Common components of all four ITET programmes have been:

- An introductory 3-day workshop to establish the Fellows as a group who will be working together for the next 6 months, using models of experiential learning and groupwork.
- Mixed discipline action learning groups, to support project development.
- Workshops on learning and teaching topics, chosen and run by the Fellows themselves.
- Skills workshops in online learning and educational media development.
- A 1-day ITET Symposium for to all University staff, run by the Fellows.
- A final 're-entry' workshop to explore how the Fellows are going to share the benefits of the Fellowship with their colleagues when they go back to their former duties.

Components that changed as a result of feedback and/or external events included:

- Workshops to explore educational theories.
- An online learning component.

Evaluations and actions

The first ITET program was predominantly face-to-face, with the online component consisting of a group website and discussion forum. There was an informal review session with Fellows every 4 weeks. Feedback from these indicated that participants were happy with the group topic workshops, project groups and skills sessions. However, the 'input' sessions on educational theory and design were less popular.

One conclusion from this was that Fellows felt that their projects had already been defined, and that questioning the basic theory and design was of limited value. Also, most had no experience of online learning as a student, and therefore failed to understand the need to go back to the basics in educational design theory when introducing new educational media.

In the second ITET program the sessions on educational theory and design were replaced by an experiential online learning component covering similar topics. More evaluation data was collected; from questionnaires, notes (typed live) of group discussions, and review sessions.

The feedback from ITET2 showed that the online component did have the intended effect – a new awareness of how students might experience online study. There was still some tension between progressing projects and taking time to explore educational design theory. Some Fellows felt that the presentation of educational theory was one-sided, and that more alternative models and debate were needed.

In ITET3 the online component was restructured to link theory more explicitly to project planning stages. Other aspects of the programme were also revised. This included the provision of a common room, to support the social interaction, which ITET2 Fellows had found valuable. We continued collecting feedback as in ITET2.

Because of the workload in running two programmes a year, the team decided to delay ITET 4 until Session 2 2003, to give time for review, analysis and planning. An interim evaluation report included thematic analysis of all whole group discussions in ITET2 and 3. The results were reported to the ITET team who discussed the implications, after reviewing and updating the aims of the Fellowship and the principles upon which it is based.

Although ITET3 had been less resistant to educational theories than earlier groups, there was still a reported perception that there was a ‘party line’ on educational design, despite efforts to the contrary. In an attempt to deal with these continuing difficulties with educational theory, ITET4 introduced a phased approach, where Fellows spent 3 weeks at the start of the programme, exploring and articulating their approaches to learning, and developing a set of educational issues that they wished to address. Only at the end of this period would they be expected to have defined the scope of their projects, once they had begun to establish a shared educational language amongst the group.

To accommodate this change, the start of the project action learning groups was delayed and the online course component was reduced to a 3 week period, during which time they worked entirely online. The number of group topic workshops was also reduced.

The ITET4 evaluation involved collecting similar records of discussions, questionnaires and review sessions as in ITET2 and ITET3. In addition, to explore disciplinary differences and establish the role of the Fellowship programme in bringing about change, cognitive mapping interviews with Fellows were carried out before the start of the programme, and after it finished, between March and July 2004. These are contributing to a detailed study of how the programme changed the participants' strategies for learning and teaching with technology.

A final evaluation report in March 2004 summarised the development and impact of all 4 programmes.

Results

The criteria for assessing organizational results are:

1. Meeting the overall purpose for which the strategic initiative funding was allocated
2. Innovations in learning and teaching practice
3. Systemic change

4. Costs and benefits.

1 Meeting the overall purpose

Funding was originally allocated for four Fellowship programmes that would give 60 staff time and support to enable them to become engaged in building the University's capacity for innovative teaching using educational technology to enhance student learning.

We have funded 65 ITET Fellows from the centrally funded programmes. A further cohort, taking part in a fifth Fellowship funded by their Faculties, brings the total to 75 staff who have actively engaged in and completed the Fellowship programme, 69 of whom are still actively involved in teaching in UNSW. Distributions by Faculty are shown in Table 1

During the course of the four programmes, it became clear that Fellows would sometimes be unable to free themselves completely from research and teaching responsibilities, such as attending conferences and supervising research students. Nevertheless, attendance at programmed events was good, and improved with successive programmes, when expectations of release from other work were clarified further with academic units.

Table 1. ITET Fellows completing the programme, and total currently in in each Faculty

Faculty/Division	ITET1	ITET2	ITET3	ITET4	ITET5	current total
Australian Defence Force Academy		1	1			2
Faculty of Arts and Social Sciences	1	2	4	4	2	13
Faculty of the College of Fine Arts	2	2	3	3	1	11
Faculty of Commerce and Economics				3	1	3
Faculty of Engineering		1	3	2	1	4
Faculty of the Built Environment	2			2	1	5
Faculty of Law	1			2	1	4
Faculty of Medicine	2		1	1	1	5
Faculty of Science	5	7	2	2	1	16
Central support staff (e.g. Library)	1	2	1	2	1	6
	14	15	15	21	10	69

2 Innovation in learning and teaching practices

Around 60 of the Fellows who have completed the Fellowship developed a practical project to address the learning and teaching issue they identified in their initial applications. In a significant proportion of these, the final project went beyond their original conception of a solution. For example, in one case, the intention to develop a specific tool for use within an existing course design became a redesign of the whole course, with implications for other courses in the curriculum. ITET Fellows have been encouraged to publish papers about their projects, and many have done so.

The presence of Library staff in the Fellowship groups led not only to new information literacy resources online, but also a significant increase in Library staff work with academic staff on course development.

The Fellows' discipline and organization context may limit, or delay, tangible evidence of successful innovation. This was the case in the School of Physics, but substantial innovation is now taking place, after some unpredictable developments that ITET Fellows were able to take advantage of (Hunt, 2004). The Re-entry workshops in the programme are intended to help the Fellows manage this reality.

3 Systemic changes

ITET Fellows have individually contributed to staff development by running sessions for immediate colleagues, or for other staff development initiatives. Several ITET Fellows now have formal positions of responsibility, as Heads of School, or in Faculty level coordination of education.

There have been notable successes in the Faculty of Science, where there was a critical mass of Fellows. A Science Learning and Teaching Interest Group has been set up. New posts have been created. Several Faculty-wide policy reviews are underway, including promotion criteria for teaching.

In the Faculty of Law too, new roles and posts have been created, with ITET Fellows involved. The Faculty runs a major distance programme for the Australian Taxation Office, which has now added online learning to print and telephone tuition.

Yet in the Faculty of Arts and Social Sciences, which is much smaller than Science and has a higher density of ITET Fellows, organizational change at Faculty level is not so evident, although some individuals have been able to make a substantial difference at School level.

In May 2003 two faculties ran forums to explore links between research and teaching, involving students as well as teachers in the discussions. In March 2004, when the University management approved investment in an integrated 'eLearning' infrastructure, they agreed to an information architecture designed to support new *Guidelines on learning that inform teaching at UNSW* (UNSW, 2003).

A fifth ITET Fellowship programme, funded by Faculties themselves, formed the core of the initial users of the new learning management system, which is at the centre of the eLearning infrastructure. The ITET Fellows are testing how well it is able to meet the *Guidelines*.

Other Institutional initiatives arising from ITET Fellows' discussions and written feedback on factors that help or hinder change include:

- a University Network in L&T
- university-wide events on criterion-based assessment
- a group and events to support the scholarship of L&T.

In 2004 the UNSW won an Australian Universities Teaching Council award for its initiatives to build communities of practice in learning and teaching [see http://www.autc.gov.au/2004_profiles.htm#7].

4 Costs and benefits

The core project funding was allocated for buy-out of staff time. Additional costs that can be specifically attributed to running the ITET programme amount to about 18% of the total, including support staff costs. It is likely that many of the central support staff would have been carrying out similar work in other ways had the programme not existed – for example consultations and courses for individuals rather than for an organised group. ITET was therefore, a medium for directing and focusing central educational development effort in a strategic way, to improve learning and teaching across the University.

The funding of a fifth Fellowship programme in 2004 from Faculty funds is evidence that the benefits of investing staff resource in educational technology development are now becoming formally accepted.

Discussion

The ITET Fellowship was a major institutional initiative to transform the University's learning and teaching systems, in the context of increasingly rapid change in the higher education environment. Central to the strategy were:

- investing staff time in the planning and organization of teaching
- building scholarly communities of practice in learning and teaching
- taking an action research approach to the management of the initiative, to allow for continuing organizational learning.

Planning and organization of learning and teaching

Innovative teaching, particularly when it introduces new educational technologies, requires reflection, evaluation, planning and preparation. However, in a campus-based university, teaching time has traditionally been measured in terms of classroom contact hours. This can mean that time and resources are not allocated to allow teaching to take the same scholarly and professional approach normally applied to research work. The ITET Fellowship addressed this and brought about changes that are becoming established in organisational systems such as promotion criteria and curriculum planning.

Despite the fact that time release did not completely eradicate time constraints on the ITET Fellows, it has been a major factor in the success of the initiative so far. The funding of a fifth programme as part of the eLearning initiative shows that this principle is becoming insitutionalized.

University-wide communities

ITET Fellows are creating and contributing to new networks in learning and teaching across disciplines. This is beginning to bring about improvements in the student experience, especially where a critical mass of Fellows has formed the core of an organised and dynamic community, as has happened in the Faculty of Science.

The university is a large, diverse and complex group of communities, and the Fellowship has had a significant influence in developing a greater shared understanding of learning and teaching. The cognitive mapping analysis from ITET4 may provide a more complete picture of how the programme itself enhances the participants' ability to bring about change.

There is an inevitable tension between recognising and building upon existing disciplinary communities and experience, and introducing new ideas about educational technology and cross-discipline teamwork. The interim evaluation of the first three ITET programmes addressed this and formed the basis for changes in ITET4. While we do not have a foolproof recipe for community building, we have achieved some practical success in our own context, which has been externally acknowledged.

Organisational learning

The Fellowship has been conducted as an organisational learning initiative, and not as a one-way intervention by management or central support to bring about specific changes. All those associated with ITET have been developing a body of knowledge about learning and teaching in the UNSW context, use of educational technology, the associated organisational issues, and what works best in bringing about change.

Successive evaluations of the ITET Fellowship programmes identified, and addressed, the need to put more effort into surfacing and acknowledging disciplinary approaches to learning and teaching. The Fellowship has therefore made substantial progress in meeting the challenges described in the literature.

Improved student experience will take some time to show through in external measures such as such as teaching quality ratings from national graduate survey reports. Internal student questionnaires, although better in this respect, will still depend on interaction with many university staff and systems, not all of which can be changed immediately.

The ITET Fellowship took place alongside other related initiatives to improve the quality of learning and teaching. So we cannot attribute all changes exclusively to the Fellowship. But we can identify how ITET Fellows and their projects have contributed to change in learning and teaching practices and systems. A detailed study of the impact of the ITET4 programme on individual participants' thinking about learning and teaching will provide additional evidence.

Conclusions

The ITET Fellowship was set up as a practical staff development initiative to give empathetic support for reflective practice and scholarly collegiality in teaching. Running and evaluating the Fellowship programmes proved to be a valuable a learning process for the ITET management team, and for the Institution as a whole. Once the Fellowship groups began to share experiences and discuss strategies for changing their own teaching, it became clear that transforming the learning and teaching systems across the institution would require more than an injection of new educational ideas and technologies.

We learned to be more receptive to the need for multidisciplinary communities to develop their own understanding of learning and teaching, rather than having one imposed by educational specialists or senior managers. This is now becoming codified in formal systems and policies, which are being implemented in practice.

ITET took a systemic approach that was flexible in its implementation. It identified institutional blocks to the transformation of learning and teaching, and set in train some irreversible changes. This has laid the groundwork for an institution-wide eLearning programme, and for future sharing of knowledge about learning and teaching (with all types of technology).

It is hard to attribute organizational changes exclusively to the Fellowship process. A more detailed study of how individual Fellows changed their thinking and strategies as a result of the Fellowship will provide more direct evidence of the success of this initiative.

Acknowledgements

We thank the other members of the ITET management team and all the ITET Fellows for their contribution to this project.

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