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A BLUEPRINT FOR TRANSFORMATIONAL ORGANISATIONAL CHANGE IN HIGHER EDUCATION: REAP AS A CASE STUDY
DAVID NICOL AND STEVE DRAPER

INTRODUCTION

In this chapter we discuss a large-scale development project in a higher education institution, the REAP project (Re-engineering Assessment Practices)[1], in relation to transformational organisational change. In earlier papers (Draper and Nicol, 2006: Nicol and Draper, 2008) we discussed innovation at the level of course redesign. Here we focus on change at the level of the whole institution. The following are the questions we wish to address: what are the obstacles to achieving transformational change in teaching and learning across a whole institution? What were the strengths and weaknesses of the REAP approach in this respect? What lessons have we learned and what advice would we now give to other HE institutions or to national agencies that fund projects to improve teaching and learning across a whole institution? We first provide some background, identify barriers to institutional change and give an overview of the REAP project. We then discuss aspects of REAP that proved effective in addressing these barriers.

THE E-LEARNING TRANSFORMATION PROGRAMME

In 2004 the Scottish Higher Education Funding Council, since renamed the Scottish Funding Council (SFC), launched its e-Learning Transformation Programme. Bids were invited from higher and further education institutions in Scotland for projects

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1   www.reap.ac.uk

that would promote 'transformational' change in teaching and learning facilitated by information and communication technologies (ICT). The definition of transformation given by the SFC was the following:

Transformational change will require a conscious and deliberate decision made by one or more institutions to do something differently in a systematic way across the whole institution, on a defined timescale of two or more years.

Thus, projects funded under the e-Learning Transformation Programme were expected not only to demonstrate enhancements in teaching and learning, but also to show the strategic embedding of changes across the whole institution.

BARRIERS TO TRANSFORMATIONAL CHANGE

The SFC programme was ambitious in seeking changes in teaching and learning that would impact across a whole institution. In the list below we identify some of the obstacles to this kind of internal institutional change. This list owes a debt to Lindquist (1978), but it is derived from our own experience of over 20 years in trying to promote and support academic innovations.

— Major disciplinary differences in teaching and learning.
— Isolation of academics from the educational research literature.
— Weak linkages between local innovations and strategy developments.
— Low levels of senior management buy-in after funding is secured.
— Little evidence about the benefits of innovations.
— Funding diverted to supporting development activities already underway.

A significant barrier to institution-wide change in HE is the organisation of teaching and learning into departments and disciplines. The lives of academics, their ways of knowing and investigation, their affiliations, career prospects and reward structures are almost all bound up in disciplinary cultures, norms and behaviours. The SFC was interested in projects that involved "doing something differently in a systematic way across the whole institution". However, this seems to require some kind of uniformity of approach, even though most successful educational development projects usually work with, rather than against, the diversity associated with disciplinary cultures.

A second barrier to institution-wide transformational change is that most academics working in the disciplines are not knowledgeable about research on teaching and learning in HE. Even if they have read literature on teaching and learning generally or that which exists in their discipline (e.g. *Journal of Chemical Engineering Education*), they may have little experience in translating educational ideas into effective teaching and learning practices. So a key issue is how to support academics in making informed changes in teaching and

learning without having to study the educational literature, which is a discipline in itself with its own theories, terminology, discourse and approaches to evidence.

Thirdly, institutional embedding of change implies a strong linkage between local innovations carried out in departments and institutional strategies and policies for teaching and learning. Yet this linkage has proved difficult to achieve through traditional educational development projects where the motivation for change is normally to address local not institutional needs, which in turn often seem to the academic staff involved to be different across disciplines.

Fourthly, senior management buy-in is important if an educational idea is to take root across a whole institution. Senior support is needed to facilitate commitment at decision-making committees and to ensure that any project successes lead to changes in policy and strategy documents and to subsequent action within the institution. Yet senior management support for academic innovation, while often strong at the planning stage when external funding is being sought, often dissipates after the funding has been secured. Also, few HE institutions have organisational structures in place that enable them to learn from, and build on, their own successes in locally developed projects. Indeed, a characteristic of most HE institutions is that innovative practices are rarely shared, or even known about, across departmental boundaries.

Fifthly, while it is easy to recruit early adopters to projects where funding is available, it is much more difficult to bring the late majority on board if the project is not perceived as successful. One reason for this is that most projects are not systematically evaluated and thus provide little good evidence of benefit. This makes it difficult to persuade others across the institution, and particularly those from different disciplines, to get involved or for senior managers to use the findings convincingly to inform strategic developments. Finally, many funded projects get sidetracked away from their original goals. Instead of the funding being used to carry out project activities, those receiving funds use them to advance improvements in projects already underway before the new funding stream became available.

OVERVIEW OF THE REAP PROJECT

The REAP project was one of six projects funded by SFC. REAP was a collaboration across three HE institutions – the University of Strathclyde (lead institution), Glasgow Caledonian University and the University of Glasgow. The REAP project set out to redesign assessment and feedback practices in departments and faculties across the three institutions with the explicit aim of developing in students the ability to monitor, manage and regulate their own learning.

This chapter focuses on the University of Strathclyde, as the work in that institution is most relevant to our present focus on institution-wide change. At Strathclyde, REAP involved the planned and supported redesign of assessment and feedback practices in nine large first-year modules and one third-year module

with student numbers ranging from 190 to 560. Course teams from nine different departments representing disciplines across five faculties carried out the redesigns. The spread of departments across all faculties had a dual purpose: to demonstrate that the models developed through REAP could be applied within any discipline and to ensure impact across the whole institution.

The REAP redesigns involved changes such as shifting some of the responsibility for assessment and feedback from academic staff to students, enhancing opportunities for students to monitor and self-assess their own learning and to participate in assessment processes such as peer feedback. All the redesigns were systematically evaluated in relation to input (staff time), process (changes in methods of teaching and learning) and output measures (exam results, student and staff perceptions). Of the ten redesigned modules, six showed measurable gains in student attainment, including improvements in the overall exam pass mark of between 6% and 16% and reductions in the number of students failing exams. None of the redesigns increased teacher workload, after allowing for the cost-to-change, and some redesigns showed reduced workload. Student satisfaction was high across all implementations and academics were also positive about the teaching benefits to the department. Brief descriptions of three course designs are provided in the Appendix.

As the project progressed, REAP ideas began to spread across the University as evidenced by recruitment of new course teams, discussions in departments and faculty committees, and through a new university policy for assessment and feedback. This policy, which was approved by Senate, was derived directly from REAP, but was also informed by, and refined through, extensive consultations across the whole institution. REAP funding ended in 2007, but its legacy continues. At the time of writing, many whole departments and faculty groups are redesigning modules and programmes using these principles. Further work is taking place in collaboration with Registry and Planning to align course validation and approval processes to the underlying educational ideas embedded in the assessment policy. Resources are being piloted to support staff development in course redesign with a focus on assessment and feedback.

The REAP findings have attracted considerable attention across the HE sector. Many UK universities have adopted or adapted the REAP principles and embedded them in strategy documents. Numerous UK projects have secured research funding based on plans to implement the principles. REAP findings have been shared with institutions in Europe, Australia and the US, with some using the principles to steer development activities.

THE REAP APPROACH TO TRANSFORMATIONAL ORGANISATIONAL CHANGE

REAP had significant educational success within the University of Strathclyde as measured in improved learning achievements, high levels of student satisfaction across a number of redesigned courses and, in some cases, reduced teacher workload. REAP

also demonstrated successful organisational change as indicated by: the number of courses redesigned across the institution (at least two in each faculty); changes in the institutional strategy for assessment and feedback; and explicit reference back to the REAP project in ongoing developments in departments, faculties and the institution (e.g. quality enhancement, credit restructuring). So what were the key features of the REAP approach that contributed to its success in moving beyond individual courses to change at the institutional level?

The project started with a conceptual foundation that brought together a theoretical analysis of assessment and feedback at a number of levels and published empirical findings of effective practice. From this analysis we formulated a set of short summary statements that were used to communicate what the REAP project was about and to gain commitment from a range of different stakeholders. Key elements of the conceptual framework were also used to guide and support a range of implementation activities across the institution. In the next section we sketch out the conceptual groundwork behind REAP. Later, we describe the deployment of REAP ideas, rhetorically and pragmatically.

CONCEPTUAL GROUNDWORK

The conceptual basis of REAP was first articulated in Nicol and Macfarlane-Dick (2006). That paper laid out an educational argument for redesigning assessment and feedback, identified a goal, a range of bottlenecks in practice and a set of initial guiding principles based on a review of research. It also made suggestions about how these principles might be used to improve practice.

Building on this work, on a further analysis of the research and drawing on many years experience in educational development work, the REAP proposal for funding to the SFC included: (i) the identification and analysis of a problem domain, (ii) the articulation of a clear educational aspiration and (iii) the formulation of a set of practice-oriented educational principles.

THE PROBLEM DOMAIN

In REAP, assessment and feedback was chosen as the focus for development because it is recognisable as an area of concern to most stakeholders in higher education. Most teachers are neither pleased with the results of the feedback they provide nor with the workload that marking and feedback involves; this is particularly true with large first-year classes. Students are also dissatisfied with assessment and feedback as shown by the UK National Student Survey where this subscale receives the lowest ratings. Many other learning and teaching issues in HE can be related to bottlenecks in assessment and feedback.

THE ASPIRATION

An innovation project that is aimed at changing ways of doing things across a whole institution benefits if there is a message, vision or aspiration that has meaning and can be acted on across a range of disciplines. This educational aspiration provides the overall rationale for development activities and for some stakeholders it gives a sense of value and coherence to the project. An aspiration is a long-range goal (or ideal), something that most people believe is important, an outcome that if achieved would be grander than the project itself. A large project might, for example, have as its aspiration to enhance critical thinking or to foster an inquiry-based approach across the whole institution.

The educational aspiration in REAP was 'self-regulation': the long-range aim was to help develop in students the ability to monitor, evaluate and regulate their own learning processes. In REAP this aspiration was also linked to practice, to 'what teachers do'. The REAP proposal to the SFC in 2004 stated:

> *The educational purpose of the REAP project is to develop students' capacity to self-regulate their learning. This will be achieved through the enhancement of teaching and learning practices that support reflection, self and peer assessment and through devising higher quality, and more strategically aligned, assessment and teacher feedback.*

In most HE institutions, as at the University of Strathclyde, the development of learner autonomy or independence is a stated aspiration or core value within the teaching and learning strategy. However, institutional strategies rarely say how autonomy is to be developed. This linking of project aspiration to the academic strategy was a distinctive feature of REAP.

THE ASSESSMENT AND FEEDBACK PRINCIPLES

Teachers need to be able to translate educational ideas into actual teaching and learning practices in their discipline if the educational aspiration is to have any meaning and if change is to transcend disciplinary boundaries. This was a key purpose of the 11 assessment and feedback principles shown in Table 1. These 11 principles define the pedagogical basis of REAP. They are deliberately expressed as short phrases or statements that point towards practical action rather than being too abstract. Each principle is backed by substantial research about how their application improves student learning.

Table 1: Principles of good assessment and feedback design (based on Nicol and Macfarlane-Dick (2006) and Gibbs and Simpson (2004))

Good feedback practice should:
1. help clarify what good performance is (goals, criteria, standards);
2. facilitate the development of self-assessment and reflection in learning;
3. deliver high quality information to students about their learning that helps them self-correct;
4. encourage teacher-student and peer dialogue around learning;
5. encourage positive motivational beliefs and self-esteem:
6. provide opportunities to act on feedback;
7. provide information to teachers that can be used to help shape their teaching (to student needs).
Effective assessment tasks should:
8. capture sufficient study time in and out of class;
9. distribute student effort evenly across topics and weeks;
10. engage students in productive learning activity;
11. communicate clear and high expectations to students.

Principles 8 to 11 are primarily about 'time-on-task'. Research shows that the more time students spend studying in and out of class, the more they learn (Gibbs and Simpson, 2004). Importantly, time-on-task is not just about active engagement in learning: research shows that time-on-task also triggers the conditions whereby students reflect on their own learning and get informal feedback from peers. In REAP, these four principles meant redesigning first-year modules so they encouraged regular and structured learning activities; for example, replacing one or two large assignments at the end of the academic year (e.g. a large essay) with series of small regular assignments (e.g. 500-word essay) throughout the year.

The seven feedback principles (1 to 7) are primarily about designing learning in ways that that would give students practice in managing and evaluating aspects of their own learning (Nicol and Macfarlane-Dick, 2006). Redesigns might involve students constructing a better understanding of assessment criteria through analysis of model answers, creating structured opportunities for reflection and self-assessment, organising for peer feedback or sequencing assignments in ways that ensure that feedback is used to improve subsequent work.

The 'time-on-task' principles provide steers to students about how much work to do and when, whereas the seven feedback principles provide steers about the kinds of work required if students are to become better at regulating their own learning. While the principles can be applied separately, different combinations would be required in different contexts (e.g. first-year versus later undergraduate years).

During the REAP project these conceptual resources were developed and improved through contributions in many different formats including research papers, presentations, publicity materials, short and long reasoned arguments for each

principle, over 100 examples of their implementation, and conference materials. Some resources highlight the principles and the research, and link these to examples of practice, while others highlight assessment bottlenecks and discuss how these might be addressed by application of the principles (Nicol, 2009).

RHETORICAL RESOURCES

The success of the REAP project required repeated acts of persuasion with regard to stakeholders across the whole institution and beyond. It was therefore essential to develop a way of presenting the messages behind the project in a convincing way that would ensure buy-in. In REAP, we used the three fundamental components of the conceptual framework described above, namely:

— the problem domain (i.e. assessment and feedback);
— the deep and worthwhile educational aspiration (i.e. the development of learner self-regulation); and
— the underpinning educational principles (i.e. the 11 assessment and feedback statements shown in Table 1);

… as entry points or rhetorical resources, rhetoric being the act of persuasion.

Our experience in recruiting course teams, in canvassing senior management support, and in numerous dissemination activities, was that these entry points or, more accurately, headline summaries, and the different arguments embedded in them, helped capture attention and gain commitment: they also acted as memory aids that stakeholders often returned to. The problem domain and the principles are perhaps most striking in that they attracted considerable interest during discussions and presentations. Importantly, however, deeper messages, arguments and resources could be accessed if academics or other stakeholders chose to drill down into the complex resource base.

While these resources were deployed in different ways at different times to secure buy-in from stakeholders with quite different needs, exactly how stakeholders responded to these headline arguments and in what combination is not clear. However, the following paragraphs illustrate some observations based on experience.

We found that some academics with practical teaching concerns were best persuaded to participate in the project by expressions of the problem domain (assessment and feedback). These academics might already have identified problems (e.g. giving feedback to large numbers, poor time-management) that they wished to address. However, later on, they might find value in the 11 principles especially when they realise that behind each principle are practical approaches that might help address their problems. The successful applications, documented in the research literature, might also be convincing as would the realisation that implementing these ideas is not just a stop-gap measure to address immediate problems, but instead actually helps realise a longer-

term educational goal: the development of learner autonomy. Other academics might initially be attracted by the principles and their educational power, especially if they hear how others have applied them; for example, many academics have been attracted to the idea that when students spend regular time-on-task that they are more likely to self-identify areas worthy of further study and to discuss their work with peers.

Still others, for example a vice-chancellor, might be more interested in promoting a general educational aim (or graduate attribute) across the whole institution and might be persuaded first by the aspiration of self-regulation then by the principles perceived as practical ways of developing this. The target of assessment and feedback might then be seen as the aspect of courses in which this development would be best pursued.

As noted earlier, we gave numerous presentations on REAP both internally and externally. What happened at these events also provides insight into the way academics responded to these rhetorical resources. For example, at the end of a presentation, some participants would invariably approach us to discuss ideas that had been triggered by the presentation, such as how they might apply the principles in their own contexts. Importantly, the ideas they formulated would often go beyond what we could have suggested, given our lack of knowledge of their teaching and disciplinary context. Disseminating REAP ideas was not about transmitting a suggestion, a principle or a way of addressing problems, which is then fully understood. Rather, understanding required a constructive act by the recipient: something would come out of the conversation that neither party 'had' or could construct by themselves.

This experience, which was repeated at almost every presentation no matter which of the REAP team presented, reinforced our belief that certain elements of the REAP message were captivating to stakeholders across all disciplines. The different entry points, and the balance between specificity versus generality in the format of the principles, seemed to draw stakeholders into the process of making practical sense of the ideas. Indeed, a degree of indeterminacy might be part of the effectiveness of these resources as rhetorical devices.

USING THE CONCEPTUAL RESOURCES TO SUPPORT CHANGES IN PRACTICE

How the conceptual resources underpinning REAP were used in working with course teams and other stakeholders was as important as the way they were deployed to canvass and maintain commitment. The educational success of REAP depended not just on being able to recruit course teams, but also on being able to maintain their active engagement in the redesign process. Making a decision to participate is not the same as actually participating in change-making activities. Moreover, whatever success was achieved through the redesigns, this should have an impact beyond the local course teams and lead to changes at other institutional levels (a stated goal of the SFC funding). Four activities underpinned developments intended to achieve these goals:

— a tight-loose approach to course redesign was supported within each discipline;
— local project funding was tightly linked to the application of the principles;
— an evidence base was developed to enhance credibility of the project messages to a wider group of stakeholders; and
— internal and external dissemination were deliberately used to multiply commitment across the institution.

A TIGHT-LOOSE APPROACH

The REAP project team (which had educational and technical expertise) worked collaboratively with departmental course teams to achieve multiple changes but with a substantial common element right across the institution. The format of the conceptual resources was important in maintaining commonality as well as supporting this collaboration. Especially relevant here were the principles and the analysis of bottlenecks in the problem domain.

Firstly, the principles were not promoted as a fixed template or set of rules to be followed. Rather, course teams were encouraged to, and did, adapt the principles to their own disciplinary context. The implementation process might be described as 'tight-loose': course teams were encouraged to maintain fidelity to the pedagogy behind each principle (tight), but they were also encouraged to tailor the application of the principles to their own disciplinary context (loose). For example, a self-assessment technique that worked well in Pharmacy might look quite different from self-assessment in Psychology. The tight-loose strategy provided a way of accommodating salient differences across disciplines while using a common underlying educational framework.

Secondly, we provided a range of examples of the implementation of each principle in different disciplines. This helped academics understand how the principles could easily be translated into specific disciplinary contexts. Like other learners, academics are more likely to grasp what is required if the same concept or principle is supported by many examples of application. (Indeed, this idea might be seen derivation of the first feedback principle in Table 1 – help clarify what good performance is.)

Thirdly, we did not require that all of the principles be applied within each course redesign or that each principle be applied to the same extent. The principles are inter-dependent and overlapping in their effects, and operate as building blocks for each other. For example, implementing self-assessment (principle 2) encourages students to pay more attention to goals and criteria (principle 1), or enacting regular and distributed learning tasks (principles 8 and 9) creates more opportunities for students to reflect on and evaluate their own learning (principle 2).

Fourthly, different approaches were adopted while working with course teams. This was largely determined by the perceptions and needs of course teams themselves. Some academics might be attracted by the principles, the thinking behind them and how they might be applied, whereas others came with problems they wished to tackle in their own courses uppermost in their minds.

Table 2 shows one representation of the problem-principles relationship, although this is a simplification as it seems to point to a one-to-one mapping. It is better to think of the principles as interdependent and whole course design as involving a complex interaction of many components.

Much remains to be learned about what the optimal format is for rhetorical devices like these. For instance, in Table 2 the remedies to consider in the target domain are listed alongside the common problems. This seems to highlight the problems faced by staff and would mesh better with the idea of immediate practical action: 'Do you have any of these problems? If so, here are some solutions to consider for your context.' However, having only a single way of presenting these ideas might leave less space for the innovative jumps we have seen and benefited from in REAP.

Table 2: Relating problems to solutions using the principles

Assessment and feedback issues	Remedies (drawn from the principles)
Learners don't understand the assessment criteria so they under-perform	Active engagement with criteria and standards
Learners don't get sufficient or rich enough feedback	Collaborative projects and peer critiquing
Learners (perceive they) don't have an opportunity to act on feedback	Sequencing assessment tasks or drafts and redrafts
Learners appear dependent on their teachers	Asking students to reflect on the strengths/ weaknesses in own work
Learners are doing little work most of the time	Lots of assignments evenly spread throughout the year
Teachers don't get enough information to adapt teaching to learner needs	Online tests or one-minute papers

In summary, while the principles enabled course teams to address their own needs, their application across all the redesigns enabled the REAP team to maintain coherence across all the course redesigns and with the strategic level.

LINKING FUNDING TO APPLICATION OF PRINCIPLES

In the first year of REAP, five course teams engaged in module redesign and in the second year a further five teams participated. Each course team was given a grant. Importantly, what emerged during auditing was that the funding allocated to the first five teams was overgenerous. Few teams had spent their grant: it seemed that for many the funding was more of a legitimiser than a necessity. It allowed groups legitimately to engage in redesign activities and to justify the time they spent to heads

of department and others, rather as research grants legitimise the spending of time on research. These findings, and other considerations (potential project drift), led us to rethink the funding and management of the round two redesigns.

In round two, funding was reduced and was more closely aligned to the use of the resources. The grant was paid in two instalments. We asked course teams to produce a plan describing how they currently taught the module, the issues they wished to address and the changes they proposed to make. To receive the first instalment the REAP team had to be convinced that the redesign, while addressing the course team's needs, also embodied REAP principles and that it could be successfully implemented. However, it was made clear that the REAP team was prepared to work closely with the course teams and would provide as much advice on learning design as was required to produce a convincing plan. A second instalment was released when a final report was received, which had to include an evaluation of the project outcomes. In this way, funding support was used to 'buy' the deliverables required by REAP. By requiring a well thought-out plan we also reduced the likelihood of failure at the implementation stage. By requesting alignment to the principles we raised awareness about their educational value as a tool for course redesign.

BUILDING AN EVIDENCE BASE

A transformational project is measured by its practical achievements. REAP is one of the few UK large-scale projects to produce substantial data (e.g. exam results) showing that module redesign using technology can improve student learning without increasing costs. Twigg (2003) has shown this in the US, although under different conditions.

In evaluating REAP we commissioned an independent team to work collaboratively with course teams to devise suitable evaluation plans. The evaluation team then implemented these plans: they administered questionnaires, held focus groups and interviews with students, teachers and support staff and analysed course documentation. They wrote reports for departments that were subsequently discussed in teaching and learning committees. This contrasts sharply with the action-research approach favoured within many educational development projects where teachers themselves carry out all the evaluation.

The evaluation team also collected data directly related to the change process, rather than only about learning gains and student satisfaction. This was achieved by comparing every module redesign against what it replaced using the 11 principles. This information showed the ways in which each redesign had increased opportunities for self-assessment, for peer dialogue etc. Taken together across all modules this provides measures of changes in educational processes across the whole institution.

The production of an evidence-base added to the credibility of the principles and the framework of resources surrounding the REAP project. Such evidence of educational and cost-effectiveness was important in recruiting subsequent course teams beyond the first round and in raising the profile of the project in the minds of

senior staff. We have become convinced that collecting evidence is essential for the embedding of change and in encouraging others to adopt a similar approach.

MULTIPLYING INSTITUTIONAL COMMITMENT THROUGH DISSEMINATION

A key goal of REAP was to foster change at local and institutional level. The dissemination strategy was intended to address this goal. Internally, we created opportunities so that the early dissemination of project outputs would influence and spread to other departments. To achieve this, we asked the course teams to share their findings at informal 'brown bag' lunches and at internal events. This worked better than expected: some teams were so enthused by the results of their redesign that they acted as advocates for REAP through their own departmental and faculty committees. For many academics, the redesigns revitalised their own experience of teaching. Some made presentations outside at conferences both in the UK and abroad. Also, whereas in round one the course teams were selected because they already had a track record of innovation, round two course teams were self-selected: this was very likely the result of the high visibility of REAP across the University.

External dissemination involved systematically lodging all developing outputs from REAP on the website. The REAP team also made more than 50 external presentations at conferences and events over 18 months, published papers, held workshops and organised an online international conference, which attracted over 400 participants from 32 countries. Arguably, this external dissemination had as powerful an effect as the evidence of internal change in getting senior managers on board. Not only was there a buzz about REAP within the institution, but when senior managers attended external events they also reported hearing positive feedback about REAP.

ADDRESSING THE BARRIERS

How did REAP address the barriers to transformational organisational change? The main difficulty in achieving co-ordinated change across a university is the fundamental division of HE into disciplines. REAP addressed this through a common set of principles to support redesign and by working with project teams to help them apply them in their own disciplinary context. The isolation of academics from educational research was addressed by providing numerous entry points into the research, while at the same time making it easy for academics to drill down deeper into the network of concepts and arguments when needed.

The normally weak linkages between local innovations and institution-wide strategies were overcome by basing the project on a single set of educational ideas and by tying each separate course redesign to that set. We also ensured that funding didn't drift towards activities that were useful locally but not institutionally. Requiring that evidence was collected from every course redesign made embedding of the

changes more likely, made it more likely that new course teams would become involved and that senior management buy-in would persist after the project funding was secured. Finally, the dissemination activities ensured that the evidence and other celebrations of success had as wide an impact as possible, internally and externally.

CONCLUSION

In this final section we propose a blueprint (or, dare we suggest, a set of principles) for how to construct a large-scale project that generates transformational organisational change across a HE institution.

A large project that depends on communication, persuasion and co-ordination across a whole institution would benefit from having its conceptual groundwork and structure well worked out in advance. At the very least, the project should identify and analyse a problem domain, formulate a worthwhile aspiration and develop a set of educational principles backed by research. These components would provide entry points or headline summaries that will enable the communication of the project messages successfully to all stakeholders; to academics, senior managers and funding bodies. Behind these summary messages, however, interested stakeholders should be able to drill down deeper if they wish.

These same conceptual resources will be needed to support academics in redesign activities, which will invariably involve academics in deeper elaboration of the principles and of the problem domain. Four activities would be required to ensure a high probability of achieving the goal of transformational organisational change. Specifically, a tight-loose approach should be adopted in working with teams engaged in course redesign, project funding should be linked to the core educational principles, an evidence base should be developed, and internal and external dissemination should be used to bring new teams on board and gain continuing commitment from senior managers. So the recommendations are:

1. focus the project on a widely recognised problem area;
2. ensure that there is a long-range and worthwhile educational aspiration that is grander than the goals of the project itself and that is related to the strategy;
3. develop a set of simple practice-oriented principles based on research that specify but do not over-specify what needs to be done;
4. support academics in implementing the principles in their own disciplinary context using a tight-loose methodology;
5. tightly link project funding to the use of the principles in redesigns;
6. build a convincing evidence base to enhance credibility of the project messages and to support diffusion of innovation; and
7. multiply institutional commitment through co-ordinated internal and external dissemination.

APPENDIX

EXAMPLES OF FIRST-YEAR REDESIGNS

Psychology (560 students). Lectures were cut by half and replaced by a series of six structured online collaborative essay-writing tasks over the year. Student groups took responsibility for their own working methods and feedback was provided from multiple sources (through model answers, peer dialogue and the teacher). A significant overall improvement was evidenced in the quality of written essays, in the end-of-year exam marks and in student satisfaction. Many students requested this format for other first-year classes.

Mechanical Engineering (250 students). Electronic voting technology was used to support interactive peer dialogue and feedback in lectures, online testing was used to enable 'just-in-time' responsive teaching and an online homework system enabled independent learning. This redesign led to a 60% reduction in staff assessment workload, improved retention and raised achievement of weaker students.

French (200 students). Introduced regular online formative self-testing linked to summative tests, reduced tutorials by 50% and replaced with online tasks. Enhanced face-to-face contact with electronic voting technology. Reported a reduced exam failure rate (12% to 2.8%). Students reported that the online tasks established important study habits necessary for language learning.

APPLYING THE RHETORICAL FORMAT TO OTHER PROJECT TOPICS

EXAMPLE 1

Problem domain:
The first-year student experience.

Aspiration:
More academically meaningful activities and experiences.

Possible principles:
1. Organise a group project in the first week.
2. Have students work together in the same groups throughout the year.
3. Encourage students to form their own study groups.
4. Ensure personal contact with a permanent member of academic staff.
5. Use motivating assessments that draw on real life scenarios.
6. Communicate high expectations.
7. Ensure feedback on early learning activities.

EXAMPLE 2

Problem domain:
Critical thinking across the disciplines.

Aspiration:
To have all learners understand when a critical approach is inappropriate and when useful.

Possible principles:
1. Support students in articulating the benefits of critical thinking.
2. Drill learners on the surface markers of critical thinking (e.g. reasons, counterarguments, points of view).
3. Give experiences of critical thinking in a variety of tasks where the immediate benefit can be seen.
4. Instil the habit in students of writing down not just conclusions but reasons.
5. Provide opportunities for learners to identify logical inconsistencies in what they and others write.

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