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Project Information			
Project Acronym	Course Tools		
Project Title	Course Tools		
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Partner Institutions			
Project Web URL	http://www.caret.cam.ac.uk/page/curriculum-design		
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Programme Manager	Sarah Knight		

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Interim Reporting Template

Project Name: *Course Tools, University of Cambridge*

Report compiled by: *Amyas Phillips*

With contributions from: *Sara Brandao*

Reporting period: *November 2009 – April 2010*

Section One: Summary

Provide an overview of the project to date, highlighting key developments, deliverables/outputs and achievements for the reporting period. This section may be used to inform the Programme and Support team, and may also provide the basis for an update to inform the sector about the project. We suggest you write this section last to highlight what, on reflection, are the key points from the other sections.

The Course Tools project has worked with University of Cambridge stakeholders including students, staff, departments, central administration and programme management committees, to identify five areas in which easier, faster access to information about programmes, and tools with which to work with that information, could promote flexibility and unblock innovation in curriculum design and delivery.

The five areas originally identified were

- duplicate and multiple locations of course information,
- ability of students to take advantage of lectures not officially part of their programme,
- transparency and manageability of course design and approval processes,
- rotation of course management between co-ordinating departments, and
- ability to schedule teaching within the constraints of student-centric modularised curricula.

The tools expected to address these problem areas were, respectively,

- a central repository of course information,
- a 'lecture explorer' web application,
- a curriculum design workflow support web application,
- collaboration tools for course organisers, and
- timetabling support.

The planned focus of the project over this reporting period has been the linked objectives of a course information repository and a 'lecture explorer' service, using elements of the Kuali Student Curriculum Management project. Pending our recent successful deployment of that project, we have proceeded using a relational database structure exposed and navigated via a PHP web application,

The project Steering Committee, inaugurated in January with the support of the Natural Sciences Tripos Management Committee, has become a constructive and well-connected source of guidance for the project team. An immediate concern of the Committee was the potential negative impacts on the project of asking course maintainers to keep information in yet another location, and in order to address this problem it was proposed that the scope of the course information repository be focussed more tightly, in the beginning, on information necessary to support the succeeding project phase (timetabling support).

Preparatory work on timetabling was consequently prioritised and has proceeded well, with evaluation criteria and problem cases identified, evaluation licences obtained from software vendors, and source data on current teaching, rooms and configuration of University IT systems prepared for use.

A second meeting of the Steering Committee in April this year reinforced the project's central interest in liberating curriculum innovation. While acknowledging the importance of working with the University's broad interest in timetabling, in order to further the sustainability of project outputs, it was felt that the project team should exercise caution and ensure that the interests of all stakeholders are kept in appropriate balance. Accordingly we have recently given higher priority to the achievement and evaluation of curriculum impacts over other timetabling issues (such as buildings planning) in which the University has an interest. Associated with this has been a renewed attention to overall project impact, partially displacing a narrower evaluation of impacts phase by phase.

Course Tools has recently lost its research officer, Harriet Truscott, who had accumulated a considerable amount of institutional knowledge and expertise with the project's research and evaluation framework. CARET is preparing an appropriate recruitment response and in the meantime this role will be filled by reallocating other CARET staff.

Section Two: Activities and Progress

Report on activities in support of project objectives for the reporting period. Please refer to the original project objectives and outcomes in your project plans and discuss progress against these, noting any changes.

Provide a full review of progress in terms of your workpackages including technical approaches and developments, pilot activities and project meetings. Briefly explain any changes to the overall approach outlined in the project plan, and note any amendments, for example to the project team, deliverables or milestones. If appropriate, attach an amended copy of the relevant sections of your project plan (see checklist at end of document).

Objectives for this reporting period

The planned focus for the project over this reporting period was development of a repository of course information, supporting APIs for subsequent use by IT tools intended to promote flexibility in curriculum design through superior access to, and use of, curriculum information. In particular, it was expected that delivery of a 'lecture explorer' tool that was popular with students would encourage teaching and administrative staff to populate and maintain information in the tool about courses for which they are responsible. At the same time, it was intended that preparations be made for an evaluation in the next phase of timetabling software against curriculum-constraining problems.

Project Team

Project research officer Harriet Truscott has recently left the project, and CARET, following a Fellowship secondment to the University library. Harriet had developed a considerable network of contacts and deep knowledge of curriculum design processes in the University, and also developed the project's evaluation, stakeholder engagement and dissemination plans, which will of course be hard to replace. However, she has documented a great deal of 'handover' information in the project VRE.

CARET is putting together a recruitment strategy which balances the project's need for a part time research and evaluation role, the likelihood of hiring skilled staff in this area without a full time post to offer, and the context of parallel and future work. In the meantime this role will be filled by reallocations from CARET's pool of research and development staff, who already have local knowledge and understanding of the project.

Course Tool's chief technical officer, Ian Boston, will be taking a more prominent role over the next reporting period as we work more intensively with the Kuali Student software.

Project Meetings

The Course Tools Steering Committee has met twice, in January and April. It includes the project critical friend Prof. Stephen Brown, representatives of key University stakeholder groups (Natural Science Tripos management and students, and the central administration), and the project director John Norman, and hears reports from the project manager.

At the inaugural meeting terms of reference were defined, and it was agreed that at an appropriate point the membership should be expanded to include a representative of a humanities tripos, ideally as disinterested chair. Also, that the committee should seek leave to report officially to an appropriate body of the University, most likely the Teaching and Learning Support Committee, now forming, or directly to the Natural Sciences Management Committee.

At the April meeting, concerns were raised about an apparent divergence between the interests of University stakeholders and those of the Curriculum Design programme, and the impact of this on project progress. A plan for resolving these issues was outlined which is detailed in the following pages.

Overall Approach

The plan outlined by the project steering group for the project team to implement is based on a renewed and stricter identification of areas of overlap between the interests of different stakeholder groups, specifically University administrators and course managers and the JISC's curriculum design programme. Efforts to secure project sustainability by engaging with the University's interest in timetabling generally will be pared back to address only areas with direct curricular impact. The project will focus more on achieving and demonstrating an overall impact on curriculum flexibility and innovation, reducing the emphasis on the cyclic tool-by-tool development process originally planned.

Workpackages

WP1: Project set-up, governance and initial stakeholder engagement (complete)

WP2: Review of current processes and practice (complete)

WP3: Understanding the initial issues and identifying changes desired by the end of the project (complete)

WP4: Initial design: planning innovations in in curriculum design process (complete - may need to be revisited)

WP5: Piloting curriculum design support tool with a range of programmes and modules

Project staff have been working with the Kuali Student project throughout this reporting period, but owing to the difficulty of working with a very young and lightly supported project (see WP 9) have achieved a functioning installation of the Learning Unit Management web application (now known as Curriculum Management) only in recent weeks. The original plan for this period expected this to be available for use as a repository of curriculum information in December or January.

In parallel, and as a potential alternative repository, a relational database of course information related particularly to the Natural Sciences Tripos and its overlapping programmes (Engineering, Computer Science, Mathematics) was subjected to a process of data cleaning and exposed for navigation via a PHP web page. It was intended to pilot the prototype lecture explorer with students and staff to collect feedback on how to best support lecture explorer use cases. Examples of these include a course organiser needing to obtain an overview of all information available (and requiring maintenance) about their course, a student wanting to explore an interesting-sounding lecture series to identify particular lectures relevant to them, and a departmental committee wishing to quickly gain an overview of teaching and assessment practice in an emerging cross-disciplinary area.

The lecture explorer concept was popular in workshops and interviews with students and teaching staff, who anticipated a number of benefits to planning and use of the curriculum. Our purpose in addressing it first was to give staff and students a benefit sufficient to motivate owners of course information to populate and maintain their data in the repository.

Course Tools' Steering Committee, concerned that staff would in fact be put off from the tool by the necessity to maintain course information in yet another location, recommended in January that the project team reorganise the project plan so as to proceed by more achievable steps. In the new approach, the repository at first contains only information necessary for representing timetabling and curriculum hierarchy, in support of subsequent project elements. Instead of attempting to be a ‘source of truth’ straight away, we act as a portal, linking to resources already held elsewhere. This will highlight the diversity of provision and perhaps motivate change, provided we also provide departments with a facility to opt in individually and enter data in a curriculum management system which they can subsequently export and re-use elsewhere. In terms of maintaining the data we do hold, the expectation is that the benefits of timetabling support will be sufficient to motivate positive engagement by owners of course information, while the tighter scope and increased manageability of the necessary data set means the project more likely to succeed. The repository remains capable of being extended to support the lecture explorer concept, at a subsequent stage.

In respect of **timetabling support**, preparation for addressing curriculum flexibility through timetabling proceeded well. Source data on teaching rooms (from facilities management), the local student information schema (from management information systems), the University organisational hierarchy (from the computing service), and current NST and overlapping timetables have been obtained, and made available in consistent, machine-readable form to support timetabling evaluation and any associated workflows.

Project staff made a detailed analysis of the modular NST first-year timetable, using data from past cohorts and expert knowledge, acquired over several years of assisting the NST Committee with student allocations, of how the timetable comes to be as it is today. Never-taken combinations were identified as being better targets for ‘non optimal‘ scheduling, such that they can be taken should anyone want to, but subject to some excess inconvenience. Rules of thumb used in the past to guide administrators to an optimal solution - e.g. ‘a partial clash is preferable to a complete clash’ - were identified as being, in fact, non-optimal. Abandoning them might introduce scope for some flexibility within the current timetable.

University, departmental and programme administrators have been interviewed about their current practice around timetabling, room allocation and planning, in particular what they aim for and what problems they experience, and the impact of these on teaching provision. Evaluation criteria drawn from these interviews give insight into the value of possible solutions from the point of view of the University’s administrators, who as the likely owners of any such solution are key stakeholders.

The experiences of other universities, including UCL and Imperial College have been sought, and project members have attended two timetabling conferences, one held by JISC jointly with the Academic Registrars Council (ARC) and the Association of University Administrators (AUA), and the other more informally by Andrea Buttle of the Southern Universities’ Management Service. Information from these meetings has guided our approach to and expectations of timetabling solutions, and our selection of four candidate systems, with each of which we have concluded agreements for evaluation, either for free or for a small cost.

In terms of the project’s intent, stated in the previous interim report, to take advantage of the University’s interest in timetabling in order to secure sustainability of project outputs, this is valuable. Satisfying the University’s interest sufficiently for it to be able to progress, however, requires the project to include in its plan for evaluation of timetable solutions problems of estate planning (type and amount of teaching room provision) as well as more immediate issues of curriculum flexibility. This is not necessarily a bad thing, but the extra effort of addressing these questions must be in proportion to the benefits gained, and, as the Steering Committee has observed, this should not be allowed to occlude the true purpose of the project, which is to foster innovation in curricula.

As well as delineating more clearly the scope of the project’s interest in timetabling, we will begin a programme of engagement to raise awareness of curriculum design (not just curriculum management) amongst staff, generally and in the NST particularly, in order to establish a wider understanding of the scope of the project, and encourage new proposals to engage with us.

We have already identified four specific and evaluable **problem cases for timetabling support**, for attempted solution and subsequent evaluation.

The first is the introduction this year of a Scientific Computing module, a special course of six workshops in the first term of the NST first year, for which space needs to be created or at least optimal slots identified. Currently, the proposed solutions result in NST students taking certain options not being able to take this course, or in the expenditure of teaching resources on multiple instances of the course.

The second is the introduction of a major option in Structure and Structure Determination in the NST fourth year (Part III), which is proposed for academic year 2011-12. This interdisciplinary option should be available to students taking part IIIs in the departments of Physics, Earth Sciences, Chemistry and Materials. The task of co-ordinating timetables and assessment practices across these departments, which hitherto have had little to do with one another at part III, is a significant barrier to this module's introduction.

The third problem case is that previously discussed - the general intractability of the NST parts 1A and 1B (years 1 and 2). The success criterion here is that the NST management committee should feel confident that it is able to optimally manage the process of adjusting the timetable to accommodate changes in teaching patterns and course offerings. At present, the perceived impossibility of this means that changes mostly occur below the management committee's radar, accepting the constraints of the existing structure. A real litmus test of the curricular value of the project would be if some of these kinds of changes did emerge to take advantage of this new capability.

The fourth problem case is not in the NST at all, but in the current design process being applied to a proposed cross-disciplinary Humanities and Social Sciences Tripos, combining a number of existing triposes. HSST is intended to offer a modular first year across many disciplines, in the model of NST. This is a somewhat speculative as we have not yet engaged meaningfully with the key stakeholders and have not identified a curricular impact.

WP6: Evaluation of new processes

Evaluation of lecture explorer is presently 'on hold' but has been shown to University administrators for comment. Other elements of the Course Tools programme of interventions are not yet sufficiently advanced to have evaluable impacts.

WP7: Embedding of new processes

This workpackage supports integration with University IT systems, training of staff and transfer of systems to support functions. Integration with the facilities management and student information system databases over this reporting period has focussed on obtaining agreements to share estates and SIS information. We have also determined how the SIS represents course information and will align our own course information data model with this if at all practicable. We have engaged with the University Computing Service, who have recently announced that they deploying Google calendar across the University - a tool which offers many potential points of integration with course information.

WP8: Engagement with Phoebe and/or LPP / LDSE

This work package is about supporting an awareness of pedagogical best practice in course and programme design, for which purpose pedagogical planning tools Phoebe and LPP were originally considered. As the project has progressed it has become apparent that the field of available tools, some developed by sister projects in the Curriculum Design programme, is much wider. Project staff have spent some time reviewing these tools and discussing informally with University stakeholders how and what could be offered to staff effectively. This is synergistic with the OULDI project in which CARET is a partner. Course Tools expects to to offer a course development workflow tool in which support for pedagogic practice can be embedded.

WP9: Engagement with Kuali Student project

The Kuali Student project has been slowed and reduced in scope in response to budgetary pressures amongst contributing universities, but it will be deployed for enterprise use in the Universities of

British Columbia and California (Berkeley) in Summer 2010. Development effort currently prioritises those institutions' needs but the core functionality is already present. The 'founders' 1.0 release' made in May 2010 is not public as originally planned, instead being billed as an opportunity for implementers such as ourselves to gain experience and develop documentation ready for a public release in September 2010.

Project staff have spent much of this reporting period working with the Kuali Student project. Specifically, we have made contributions to the QA plan, including non-functional requirements, installation instructions, and support infrastructure, and we have promoted consideration of issues of internationalisation.

Three project members attended the annual Kuali Days conference in Austin, Texas on November 17-18 2009, including a pre-conference meeting with the Kuali Student lead architects and project manager, in which we were able to clear up some apparent blocking issues, particularly regarding how KS associates 'learning units' (LUs) with 'organisations'[1], previously considered a serious risk.

Documentation of the KS deployment process at an institution is still in development, and we are providing feedback from our own experience, which as a 'clean hands' institution is representative of the kind of experience a public release would provide.

In fact, as a clean hands institution we encountered considerable problems deploying Curriculum Management, finding existing documentation inadequate and the support infrastructure skeletal. At present this consists of a small user group comprising implementing institutions, in which development teams do not participate. However, having increased the amount of input from CARET's chief technical officer Ian Boston we have now succeeded in deploying a working instance of the Kuali Student system and will now begin exploring the curriculum management tools with a view to using them in WP5.

We also hosted two sessions at Kuali Days, one on Taking Curriculum Management Outside of North America, and one on Exchanging Student Records Globally. Kuali Student's curriculum management module has been developed by a consortium of English speaking North American universities but is meant to work in any educational jurisdiction. To this end we have promoted the ideas of a UK reference university (KS ships with a default configuration, 'Kuali Reference University', modelled on North American practice), standards for exchanging course (eg ECTS, XCRI) and student information, and an international implementation user group.

KRU is built from business process requirements of the founder institutions, and gets implementers quite a long way towards a configuration that works to their own institution. All implementors have to do more work to get to a production system, but non North-American implementors would have to go a bit further. How much further is one of the things Course Tools will now investigate.

Course Tools also attended the launch of an alternative curriculum management system from Agresso[2].

WP10: Oracle evaluation and comparative analysis

Project staff have continued talks with the administrators of Cambridge's SIS to understand the usage and configuration of their Oracle SIS, developing our understanding of how and why they represent course in the way they do in order to compare with Kuali Students' model, claimed to be superior.

We plan to call in our commitment from Oracle toward the end of the project, when we have placed ourselves in a position to make testable assertions about the relative merits of the systems for curriculum management, which they have said they will test and respond to.

WP11: Engagement with synthesis project, programme and JISC community

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[1] http://coursetools.caret.cam.ac.uk/post/kuali-days-viii-continued

[2] http://coursetools.caret.cam.ac.uk/post/can-curriculum-management-software-support-quality-in-teaching

Our cluster held one CAMEL event, at which we began work on a generic course development and approval workflow.

We hope to make some contribution to XCRI in the next period.

Section Three: Risks, Issues and Opportunities

Review your original risk analysis and comment on any changes to the risk profile and how you are managing this. If any risks have become live issues affecting the project explain how you are dealing with them. Report on any other issues that did not stem from identified risks and explain how you are tackling them. For all identified issues or challenges detail what impact any issues may have on the achievement of project targets.

Report on any unexpected opportunities, positive outcomes and successes arising from changes to the plan and new opportunities.

The following risk factors have changed or been newly recognised.

Risk	**Probability (1-5)**	**Severity (1-5)**	**Score (PxS)**	**Action to Prevent/Manage Risk**
Kuali student LUM not suitable for use at Cambridge	1	4	8	**Eliminated risk:** Having engaged with both our own course model and Kuali Student's learning unit model in more detail we are now confident we can represent our course structures and management flows.
late delivery of Kuali Student Curriculum Management Module	5	3	15	**This has become a live issue.** Originally expected to be available to the project late 2009, difficulties with KS have delayed its availability until April 2010. This has not prevented us from obtaining data, but gives us less time to evaluate and configure the tool for application to curriculum management tasks at Cambridge (if suitable: course information repository, proposals and validation workflow). Supposing KS workflow appears to be a tool capable of supporting and promoting curriculum innovation, this in turn creates a new risk; that we will not have time to evaluate KS in real cases (see next)
new risk: proposals and validation workflow tool has insufficient project time window for application to real cases	3	4	12	We have identified one early stage, significant, cross-departmental course proposal - Part III NST Structure and Structure Determination. This option is intended for introduction in 2011-12, within the project time window. Initial proposal and planning work needs to begin in Summer 2010. We will target this as an opportunity to test the tool (provided KS appears to be appropriate). We will also ensure it supports small as well as major proposals, and continue to find and recruit proposers.
Conflict between top down (meeting the requirements of key senior stakeholders) and bottom up (faculty/student engagement) methods each demanding different decisions at a more detailed level of the project	5	3	9	With a wide variety of stakeholders it is likely that requirements may conflict at some point. All the key users of the tools must be happy with them for the project to be successful. If such a conflict arises we will attempt to achieve consensus through negotiation. **This has become a live issue.** The project Steering Committee has already proposed action to resolve two instances of this, in the cases of the 'lecture explorer' and the University's interest in timetabling. These actions are described in section two of this report.

Risk	Probability (1-5)	Severity (1-5)	Score (PxS)	Action to Prevent/Manage Risk
New risk: departure of key project staff causes loss of project expertise or gap in staffing	5	3	15	Following an assessment of project needs within the context of CARET staffing replacements will be recruited and meanwhile internal resource reallocated to cover the gap. CARET comprises a corpus of 30-35 staff including some highly experienced personnel who can provide training and mentoring as necessary even if not directly assigned.

Section Four: Outputs and Deliverables

What outputs are you expecting to arise from the project? Please provide an up-to-date list. This should include a short paragraph summarizing expected technical outputs/system integrations, or any unanticipated outputs.

This section is not significantly changed from the last interim report.

Technical outputs will include a deployment of Kuali Student LUM configured for a UK University and accompanying documentation explaining its operation and configuration both for the University of Cambridge and the wider UKHEI community. This may include integrations with the University's Oracle / Peoplesoft SIS, which will be contributed back to the open-source Kuali community, and export options via XCRI or other course information transport format. Integrations and export options are expected to support elements of the Bologna Process requirements. The Kuali data structure will be used to store information about courses, capable of supporting applications aimed at promoting curriculum flexibility and innovation, in particular workflows for a variety of course development and approval processes, surfacing their common requirements and the sequences of actions employed to achieve them, and also timetable generation. Further technical outputs are expected to include course management templates and tools/widgets for the developing Sakai 3 VLE, and a browser/editor enabling a variety of use cases around navigating and updating course information.

Type of output (see indicative list below)	Details e.g. theme, topic, number (of this type), size/scope	Proposed audience (internal or external) and who will use this output and why?
Blog posts	Regular posts, approximately once every two to three weeks, reflecting both on what the project has been doing, and on wider issues of relevance to the project.	Both internal and external; used by both to review the progress of the project, and to learn lessons for future projects at an early stage.
Conference presentations	Workshops and conferences on Kuali Student to be held annually, in 2010, 2011 and 2012. Presentations will (as far as possible) be recorded and made available after the event.	UK and European HE institutions interested in Kuali Student
Dissemination materials	A series of articles appearing in University newsletters	Internal, particularly aimed at those with a strong interest in learning and teaching
Dissemination materials	A series of termly project newsletters, reporting the progress of the project.	Predominantly aimed at internal stakeholders, although also available externally
Dissemination materials	Videos from stakeholders detailing their experiences over the duration of the project	Predominantly aimed at internal stakeholders, although also available externally

Type of output (see indicative list below)	Details e.g. theme, topic, number (of this type), size/scope	Proposed audience (internal or external) and who will use this output and why?
Guidance Materials	Recommendations of how the requirements for new learning and teaching projects at Cambridge assure quality and well designed outcomes and might be used in other universities to guide similar projects there.	PVCs and those with responsibility for institutional IT support for learning and teaching
Guidance Materials	Open licensed documentation and online training materials for Kuali configuration (for technical staff) and use (for users and managers) at UK (and EU) HEIs.	UK and European HE institutions interested in Kuali Student. The Kuali Student project documentation effort.
Case studies	Pre and post-intervention case studies	Available both internally and externally
Evaluation report	Evaluation report highlighting the impact of innovations in curriculum design processes on departments' ability to address strategic aims; evaluation of changes that have occurred as a result of project innovations and of lessons learnt through carrying out the project. This will be written to support the full range of roles involved in these processes including course designers, technical staff, institutional/ faculty managers/heads, registrars, teaching committees	Available to all stakeholders internally: actively circulated to Education Committee of the General Board and Pro Vice Chancellor for Learning and Teaching; available externally for other HE institutions interested in learning the lessons of the Course Tools project
Review	Review of technical and pedagogical links between pedagogical planning and curriculum design. Possible integration with support tool, e.g. under the aegis of Learning and Teaching Support initiative. This will be written to support those with responsibility for QE activities	Available to all stakeholders internally: actively circulated internally via the Education Section and to Quality Assurance contacts. Available externally to all, but may be specifically promoted externally via the HEA Teaching and Learning Experts group and QAE SIG
Technical documentation	Technical documentation (which may be in a range of forms, e.g. video, text, presentations) to support both the users and the administrators of software developed specifically for the project	Available to all users of the software, internally and externally
Guidance materials	Kuali Student technical report from UK HE perspective	both technical staff and those responsible for institutional IT support for learning and teaching
Evaluation Plan	Detailed evaluation plan	Key stakeholder groups within the University; other JISC Curriculum Design groups
Evaluation Report	Reflections on the methodologies used, issues encountered, lessons learnt and recommendations for future projects	Both internal and external; used by both to review the progress of the project, and to learn lessons for future projects.

Please indicate clearly what outputs, if any, have been produced in this reporting period. Include any outputs, including interim and work in progress, that might be of interest to other projects or external audiences. Please describe and provide details of where these can be found, e.g. URLs or attached documents etc. Please note which of these if any have been uploaded to the design studio.

As part of our internal engagement programme we have created a ‘video voices’ page[3] on our project website, structured around the five problem areas identified in the last interim report. We intend to

[3] http://coursetools.caret.cam.ac.uk/video-voices

add to these as we engage with more people. In particular, we would like to have represented some senior University members.

We have also developed a detailed evaluation plan listing and scheduling evaluation activities for each of the five 'areas of interest' originally identified. This is specifically intended to provide both qualitative and quantitative evidence for analysis of impacts and effectiveness. The plan requires updating again in the light of the reprioritisation of project goals and broader 'overall effect' view now being taken by the project steering committee, but mostly only in timing. The 6-month evaluation plan presented in the next section is extracted from this programme.

We have developed a lightweight steering committee Terms of Reference, which may be of interest for other institutional change projects.

Section Five: Evaluation

Provide details of progress during this reporting period in terms of the development and implementation of the project evaluation plan. Include what activities you have undertaken (including details of the methods used), what you feel has worked, what has not, and any aspects you have changed. Please provide links to any relevant materials (e.g. evaluation reports, tools, blog posts, team reflections, etc)

During this reporting period, we intended to gather baseline figures for lecture explorer, pedagogical issues connected to timetabling, and course design workflow. Our plans were disrupted by the deprioritisation of the lecture explorer concept and departure of the project research officer, nevertheless we have collected valuable data.

Rationale / Purpose for activity	**Method**	**Participants**
Baselining current attendance at other Depts' lectures, extent to which this is/ would be valued	Online survey (may run paper-based survey if initial response levels are low) - mainly quantitative	Undergraduates in all years, in all Schools
Investigate to what extent students agree with staff concerns over inconsistent programme information	Question within larger online survey	Undergraduates in all years, in all Schools
Baselining current student experiences around the course timetable and their own time management.	Online survey - mainly quantitative	Undergraduates in the second and third years, in all Schools
Baselining student expectations and early experiences around the course timetable and time management	Online survey - mainly quantitative	First years undergraduates. in all Schools
Investigating current usage of timetabling software	Individual meetings and focus groups	Administrators in Depts currently using timetabling software

During Michelmas term just after the start of the academic year, when students' memories of getting themselves organised were still fresh, we surveyed a self-selected cross section of students using the local VLE. The survey was well received by participants, who provided some statistical evidence and also an interesting collection of insights in free-response questions. We discuss the results in two posts on the project blog[4,5].

Throughout the reporting period period we have conducted a series of visits and interviews to understand how and why timetabling software is used and what the pedagogic issues of timetabling are. We have also collected information and experiences from beyond Cambridge in order to provide

[4] http://coursetools.caret.cam.ac.uk/post/students-have-their-say-on-lecture-information-and-timetabling

[5] http://coursetools.caret.cam.ac.uk/post/student-comments-on-lectures-and-timetables

a broader context for this work. This has been used to generate evaluation criteria and problem categories and summarised in documents presented to the project Steering Committee, aimed primarily for an internal audience interested in timetabling generally within the University.

Discussions with University central administrators, part of our ongoing stakeholder engagement rather than formal evaluation activity, produced the important criticism described above of our lecture explorer ideas.

Please give details of the key evaluation activities you will undertake in the next 6 month period. Please tell us the rationale/purpose for activity, planned method, participants, and timing.

The focus of the next six months will be on timetabling, alongside preparation for a subsequent phase focussing on workflow support.

Difficulties with inflexible timetables have been suggested as inhibiting the creation of new courses, and in constraining pedagogical strategies for existing courses (i.e. if a class can only take place at a set time, and in a given lecture theatre, it may make teaching methods such as computer-based group project work impossible).

Since new timetabling software will be a major investment for the University, the evaluation strategy needs to be agreed with key institutional stakeholders, who have accordingly been involved in the project Steering Committee.

We plan a number of activities aimed at obtaining both qualitative (eg. something that was impossible becomes possible) and quantitative (eg. time savings) evaluation data. These include a survey questioning those involved with timetabling about their perceptions of the amount of time taken, a timed observation of people in various departments carrying out a standard selection of common tasks, and gathering statistics about room usage and building planning across the University at present.

Rationale / Purpose for activity	**Planned method**	**Participants**	**Timing**
Baselining current practice	Timed observation of staff carrying out a standard range of common tasks related to timetabling with their current tools.	Staff involved in timetabling in a range of Faculties	May - August 2010
Baselining existing practice	Development of example workflows for a standard range of common tasks related to timetabling	Staff involved in timetabling in a range of Faculties	May - August 2010
Stakeholder engagement	Focus group to agree questions about the perceptions of timetabling	Staff involved in timetabling in a range of Faculties	May 2010
Baselining existing practice	Survey of staff involved in timetabling to gauge their perceptions about the extent to which this is a major issue	Staff involved in timetabling in a range of Faculties	Jun 2010
Investigation of extent to which lecturers feel the inflexible timetable and restricted room choice constrains pedagogy	Online survey - mainly quantitative	Lecturers and Course Organisers in the Natural Science Tripos; Lecturers and Course Organisers in other Depts - attempt to compare the responses from those who have previously taught at other Universities with those who have only taught at Cam	Jun 2009

Rationale / Purpose for activity	Planned method	Participants	Timing
Baselining existing practice	Liaison with Estate Management and Building Services to gather data about building usage at University level	Estate Management and Building Services	June 2010
Baselining current experience of the process of creating / revising courses	Request for statistics from Education Statistics regarding current numbers of courses created / revised, time taken to create a course, time taken to implement a course, and (if available) number of times material was re-presented to the same committee.	Education Section	Continued from Dec 2009 onwards
Baselining current experience of the process of creating / revising courses	Request for statistics from Education Statistics regarding current numbers of courses created / revised, time taken to create a course, time taken to implement a course, and (if available) number of times material was re-presented to the same committee.	Education Section	Dec 2009 onwards
Baselining current experience of the process of creating / revising courses	Online survey - mainly quantitative	Administrators and academics recently involved in creating / revising courses	Jul 2010
Baseline current workflow needed to create new courses	Interviews	Administrators and course organisers	July - August 2010

Please note that we expect these evaluation activities to produce lessons and outcomes for reporting under section 5 of future interim reports and for your final report or final evaluation report.

Section Six: Outcomes and Lessons Learned

Outline any emerging outcomes or lessons that have been learned during this reporting period through your research, evaluation and pilot activities which could be of interest to others outside of your institution, and identify any emerging themes. Please be aware that these reports will be made available publicly, so please indicate clearly any lessons that you wish NOT to share more widely. Also outline any new ideas or opportunities that have emerged.

When thinking about outcomes and lessons you might: (a) revisit your original challenge and identify anything you have learned that is helping your institution to address this challenge; (b) revisit any mindmaps or other representations you have of the problem space in which you are working and identify any changes; (c) revisit your original research or evaluation questions and identify any areas in which your understanding has changed, or been enriched, qualified, or confirmed.

Our research into current timetabling practice in UK HEIs has shown that the prime motivation in most cases is efficiency of room utilisation, not flexibility of teaching provision. In most cases, those deploying central timetabling solutions have needed to employ 5-10 specialist staff, a not inconsiderable expense which must be offset against the value of benefits received. Usual practice amongst universities using timetabling software appears to be to schedule large or important items first, followed by progressively smaller and less-constrained events - not much different different, essentially, from a manual process.

Accordingly the main benefit in these institutions seems to be the ready availability of common room booking information, sometimes used to improve the student experience by provision of timetable information, and greatly facilitating the sharing and co-ordination of teaching rooms, and courses. This last is one of the concerns of the University of Cambridge, and indeed a primary concern of the project is the facilitation of cross-departmental teaching. In Department-scale deployments however we noted that this ‘common platform’ benefit is foregone in favour of a strong focus on supporting curriculum delivery and how students experience it. This theme is even more core to the project and we will seek to identify the most effective means of obtaining both these benefits.

A fact often mentioned by Cambridge staff and students is that anyone can go to any lecture. This is rooted in common values of academic freedom in research and study, and given force in the Statutes of the University. We were interested to learn to what extent students actually take advantage of this freedom, and the results may be of interest to other HEIs also. The results of our survey are discussed in more detail on our blog, but the headline result is that in Michelmas term, given the opportunity, nearly a third of Cambridge students had attended lectures not officially part of their programme.

It would be natural to suppose that students of science and engineering subjects, who typically have many more timetables hours, would be less able and so less likely to attend other lectures, but a breakdown of our respondents shows that just over a quarter of STEM subject students had attended other lectures. It might also be natural to suppose that much of this ‘visiting’ would be driven by a desire to find out more about a course prior to signing up, but the survey specifically excluded lecture courses which could form an assessable part of students’ programmes, and one-off public lectures. In fact, nine out of ten of respondents gave their reason as ‘being interested in the subject’, and just under half said that they went because they felt attending these lectures would ‘help their studies, either directly or indirectly’.

We tabulate below a breakdown of responses to the question “This term, have you attended lectures or seminars in a Department or Faculty that isn't your own, and that were not an official part of your course?”.

students’ subject area	none	once	occasionally	several times	every week	ever (%)	total
arts	25	5	6	0	1	32%	37
education	20	5	0	0	0	20%	25
engineering	16	3	2	0	3	33%	24
humanities	13	3	4	5	1	50%	26
MBA	7	1	2	0	1	36%	11
medicine	36	7	2	1	3	27%	49
technology	4	0	1	3	0	50%	8
NST	68	10	7	3	3	25%	91
vets	14	0	0	0	0	0%	14
overall %	**71%**	**12%**	**8%**	**4%**	**4%**	**29%**	**285**
overall % in ARTS	*66%*	*14%*	*12%*	*5%*	*3%*	*34%*	
overall % in SCIENCES	*74%*	*11%*	*6%*	*4%*	*5%*	*26%*	

A lesson firmly learned during this reporting period in relation to the lecture explorer concept which these data are intended to support has been the unacceptability of any multiplication of data entry and maintenance requirements to course administrators, who already have to maintain information consistently across multiple locations, and as the likely maintainers of such a system are key stakeholders. To be accepted by this key group, it is important to design so as to clearly avoid any risk of this outcome. A case for tolerating extra work can be made if unavoidable, but it needs be a strong one, and this may be difficult for an experimental system.

The related idea of a central repository of course information as conceived is supposed to solve exactly these problems, but from this we have learnt a parallel lesson: that prudence and institutional complexity make it very difficult to change such a core area of activity. Any change plan must focus on breaking down to a series of steps, every one of which is achievable and helpful for participants, with manageable risk, or else be supported by a managerial-level commitment of extra resource, which in a decentralised university such as ours may not be a practical option owing the the number of independent decisions required.

Design work which was begun on the lecture explorer concept before these problems became clear has been contributed to the Sakai 3 project, which will support various use cases around public and private course information pages and needs to draw on a consistent model of course structures and timetable information.

Our current model for this (not Kuali student, yet) uses a mixture of formal database relations and tags. The main lessons we have drawn from this exercise have been how difficult to represent the layers of organisation in curricula across an academic organisation within a consistent framework. Departments at Cambridge are not constrained by a common course template, instead they have created a variety of structures according to whatever they have determined best meets their needs. Every such structure has 'lectures' in the small and 'tripos parts' (years) and 'degrees' in the large, but in between there are alternative structures of modules, options, combinations and so on. the number of variations is in practice finite, but theoretically there's no limit. Any rigid structure invented to fit reality will sooner or later encounter an exception.

Instead we hope that Kuali Student's generic, nestable 'learning unit' model will combine flexibility with usefulness. Tags would be used to represent such properties as being examinable unit (ie this unit has its own paper), being a purely organisational device (this combination of lecture choices is known as Option A), an actual teaching or learning event (with types: self-paced, project, lecture, supervision, lab, problem class etc), compulsory attendance, and so on. We believe this is the most informative and flexible approach. Determining this capability in the Kuali model is the next step of our Kuali work. The downside of such a model would appear to be in comparability across programmes, but that is perhaps a red herring: if programmes have different internal structures, they are not directly comparable at the scale of those structures anyway. It is better to represent reality faithfully than force it out of shape to fit a preconceived form.

Tagging and exploring course information using domain ontologies, to help users navigate subject areas (perhaps not unlike Newcastle's Dynamic Learning Maps project), could be very powerful. The problem is getting hold of ontologies and applying them correctly - this is probably best left to subject experts i.e. lecturers, or crowdsourcing from students. Cambridge's engineering department has developed a detailed syllabus, broken down point by atomic point, independent of how courses are actually structured and taught. We could use this to tag course elements by syllabus item. Whether this is considered a good idea pedagogically in other disciplines remains to be determined.

Section Seven: Communication and Dissemination Activities

Provide details of any activities or events which have involved liaison or collaboration outside the project consortium, including key project stakeholders. Attach or provide URLs for any appropriate dissemination or presentation materials.

We have an ongoing participation in the Kuali Student project as exploratory implementors, primarily via fortnightly meetings of the Implementor's User Group and the annual Kuali Days conference, most recently held in November 2009. This is described in more detail in section 2.

The project also maintains an informal liaison with the Sakai 3 project, whose development proceeds apace and may offer alternative platforms on which to address issues identified by the project. To this end we are contributing use cases and requirements analysis as seems useful, e.g. around events management and course information sites.

Please also provide an update on your communication methods, including project blogs, twitter, YouTube etc. and discuss their effectiveness.

Course Tools continues to maintain a blog, twitter feed and web site (including, now, a ‘video voices’ page with videos streamed via YouTube). We intend to present a printed newsletter again this term for key contacts, and a ‘flyer’ for use in awareness-building of our interest in curriculum innovation.

Discuss any strategies you have found useful for engaging stakeholders at this stage of the project.

We have found, not unexpectedly, that functional demonstrations elicit far more concrete feedback and engagement - positive or negative - than conceptual discussions. Another strategy is adopted from previous work with stakeholder-led research at CARET and involves simply presenting problems to academic stakeholders, highlighting degrees of freedom but avoiding any immediate recommendations or detailed discussion of technical measures. This preserves stakeholders’ freedom of action so that they are able take ownership of a solution, rather than being asked merely to endorse it.

Outline any publicity the project received during the reporting period.

Section Eight: Collaboration and Support

Briefly summarise contact with the programme manager, critical friends and support team, formal or informal links with other projects, programme-related activities, and ways in which you have been able to influence the development of the programme.

Prof. Stephen Brown, project Critical Friend has attended two meetings of the project steering committee during this reporting period, where he represents informally JISC’s interest and is able to provide points of comparison with other projects.

Do you have any specific needs, requests or suggestions for support?

None at this time.

How have you found the process of working with your critical friend and Cluster? Please highlight what has worked well and what hasn’t worked as well, and any recommendations for how to improve the process.

Cluster B continues to be a source of ideas and support as described in the previous interim report and we would like to thank the programme team for arranging to continue support for this activity. We have begun working on a generic course design workflow, have presented on the CAMEL approach to communities of practice at SEDA 2010, and have plans to collaboratively produce a book.

Section Nine: Financial Statement

Total Grant		**Duration of project**	
Reporting Period			

Budget Headings	**Total budget allocated**	**Expenditure this reporting period**	**Total expenditure to date**	**Further information**
Staff				
Travel & Subsistence				
Equipment				
Dissemination activities				
Evaluation activities				

Other (please specify)				

Checklist:

Before you return this report:

Ensure that your project webpage on the JISC site is up to date and contains the correct information. Attach details of any required amendments to this report. Project webpages can be found from: www.jisc.ac.uk/curriculumdesign

If there have been any changes to the original project plan and/or work packages, ensure that amended copies of the relevant sections of your project plan are attached to this report.

Identify and name any areas within this report that you'd like removed before the report is made public (*see below)

***Please note** the interim reports will be made available on the JISC website and on the Circle site with the budgetary information removed. We recognise that projects may occasionally address very sensitive issues. We would like you to present as full a picture in this report as you can as the lessons you learn are valuable to us. We assure you that any issues you identify as confidential are removed before the report is made public. Where such issues do represent valuable lessons for the community we will involve you in further discussion as to how they could be passed on without identifying institutions or individuals.