



Project Document Cover Sheet

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eAssignment: An Institutional Submission and Management System for Assessment of Open-Ended Assignments

Trevor Bryant and Peter Gibbs

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Executive Summary

This is the final report giving the status at the end of the JISC funding for the project ended on 30th April 2010. The project has an institutional embedding phase for 12 months following the end of funding (see [JISC bid document](#)) and a further report will be published on www.jisc-ea.soton.ac.uk when this has been completed.

Our overall aims were to:

- Provide an electronic assignment handling solution for all schools and programmes of study.
- Integrate plagiarism detection into student assignment submission and marking.
- Provide robust administrative tools for the creation, modification, marking and moderation of assignments.

The project builds upon our experience of using a demonstrator system for assignment handling which tested the concept primarily within the Schools of Medicine and Nursing & Midwifery.

As the project commenced there was an institutional reorganisation of the whole IT infrastructure. Having the right culture and staffing in place was a critical factor and it took time to achieve this. However our institution is committed to the development of an eAssignment system and it is already considered as a key component of the [Southampton Learning Environment](#) which seeks to define our activities in this area from 2012 onwards.

We have developed an institutional system for the administration, marking and feedback of Open-Ended Assignments. These are:

- Student Submission
- Assessor Marking & Feedback
- Administration

The factors by which we defined our success at the start of the project were:

- 1 Use of the new system by schools currently using our existing demonstrator system
- 2 Use of the new system by a variety of other schools/programmes of study throughout the institution
- 3 Reporting of TurnItIn plagiarism data alongside marking/moderation procedures
- 4 Improvement in student evaluation of feedback processes.
- 5 Rationalisation of assessment procedures across the institution

We are not in a position to judge the overall success or failure of at this stage because the system will be able on an institutional wide basis from October 2011. However we can report increased demand from those using our existing demonstrator for October 2010 onwards. For example the School of Medicine is planning to use the system for all submission for all of its programmes from October 2010 (1). We have agreed to requests to use the system from the Schools of Humanities and Chemistry from October 2010 (2). There are simultaneous activities within the institution to [harmonise assessment processes](#) (5).

Background

The University of Southampton, like other institutions, was seeking to improve the efficiency of its administrative processes, whilst simultaneously [improving the student experience](#). It was also aware that [students rating of feedback](#) could be improved. We had already developed a demonstrator system for assignment handling and tested the concept primarily within the Schools of Medicine and Nursing & Midwifery, see: <http://www.jisc-ea.soton.ac.uk/resources/>.

The lessons that we had learnt from our demonstrator were:

- The concept was feasible, it worked and we could show savings for administrative resources, for example reducing the overall time spent administering a 3rd year medical assignment dropped from one week to one day.
- It lacked functionality for administrators and markers, we were aware of this but it helped identify requirements for an institutional system.
- The demonstrator was a victim of its own success, despite its shortcomings the Schools using it increased their usage and other Schools asked to use it.
- Students liked it. For some it meant that they did not have to travel to a School Office to hand in their assessment. One negative aspect was that students did not understand that large documents upload slowly from home. But overall they were positive and commented:
 - “It is an easy system to use and I think it would be great if all of our assignments could be submitted this way.”
 - “I thought the format for feedback was very helpful. It is very clear and helps us to identify our strengths and weaknesses more accurately - This will prove beneficial for future assignments.”
- Despite using similar processes for reviewing journal articles, some markers were reluctant to use it. They objected to online marking, printing assignments out, and some had a preference for paper.
- Some External Examiners were very positive and commented in their reports.
 - “online assignments were easy to access and the online environment provided an excellent opportunity to view and mark ...”
 - “system that works on an educational level as well as an administrative one”
- The Administrative staff were positive despite the lack of functionality as it reduced the volume of paper they had to deal with.
- The Students’ Union lobbied for a generalised provision across the University of a service available only for a limited number of programmes in its early stages
- The Institution was positive and there was agreement for a common system, but it recognised that there would be a need for institutional harmonisation of assessment.

The Schools of Medicine and Nursing & Midwifery had tried and tested the system with over 6500 submissions and 60 assignments in programmes ranging from first year undergraduate to postgraduate level.

Whilst a number of commercial and departmental systems support digital drop boxes, our review of the literature ([see bid proposal](#)) returned very few systems that supported the full cycle of the assessment of open-ended assignments of “written” work. Prior to the development of the demonstrator system an informal survey of other institutions had failed to identify any systems comparable to the one we proposed. The responses at the time could be summarised as *‘No we do not have anything, but if you develop a solution we will be very interested’*. We were unaware of systems that catered for the assignment of different markers to individual or groups of students, or the use of more than one marker, use of moderation, or access for external examiners. Some assessors wanted to use criterion-based marking, with graded responses for each criterion which facilitated structured feedback, whilst others used percentages. They also requested additional free text comments for each criterion to be provided for various aspects of an assignment.

The University was exploring the scaling of demonstrator system into an institutional one, but was having difficulty identifying the resources required to begin development due to competing corporate demands. The JISC call for the Institutional Innovation Programme was the impetus to kick-start this project at an institutional level.

During the project we became aware of an excellent review of the eAssessment area by ([Heinrich, Milne et al. 2006](#)). We were also encouraged by *HE sector overview: e-Assessment* a report by SUMS Consulting ([Walder 2009](#)) whose conclusions echoed the reasons we put forward in our funding bid: “*Major benefits can be obtained through the electronic support of assessment. Administration can be streamlined and the student experience improved.*” This, coupled with the National Union of Students campaign for improved feedback ([National Union of Students 2008](#)), reinforces the importance of developing an Institutional eAssignment system.

Aims and Objectives

Our overall aims for the project were to:

- Provide an electronic assignment handling solution for all schools and programmes of study.
- Integrate automated plagiarism detection into student assignment submission.
- Provide robust administrative tools for the creation, modification, marking and moderation of assignments.

The objectives and requirements were:

- For Students there would be online access to all assignment criteria and marking descriptors, consistency of submission, marking and feedback, improved feedback.
- For Assessors there would be a structured marking process very similar to the peer reviewing of journal submissions.
- For Administrators there would be a reduction in workload, for example staff in school offices would not be required to accept student work and then organise the distribution of work to markers, receive the marked work and return marked work to students.
- For the Institution there would be:
 - Efficiency of administrative processes, faster turnarounds.
 - Harmonisation of assessment processes across the Institution.
 - Quality Assurance and Enhancement.
 - Transparency of assignment criteria and marking descriptors.
 - Consistent process of marking and easy access for external markers.
 - Analysis of assessment at the criteria level.
 - Performance feedback to markers leading to improved marker commitment.
- For the environment there would be a reduction in the use of paper, postal systems, student travel.
- To provide (but not impose) a system that could deliver an improved assessment process.
- To provide a system that could be used by other institutions.
- To provide improved assessment feedback.
- To provide assessment feedback more rapidly.

Methodology

Institutional Level

As this was an institutional innovation we ensured that the institution was aware of the project from the outset. This was achieved by creating a project steering committee with members who not only represented a cross section of the institution, but who were also members of key University committees. We ensured that we had a good network in place to disseminate the project activities and to feed in developments and proposals arising elsewhere in the University. Our steering committee had representation from: the University Director of Education with responsibility for eLearning, two Associate Deans for Education and one Director of Education representing the three Faculties in the University, the Vice President of the Students Union (Education), and two senior members of iSolutions (the IT infrastructure group of the University). Altogether, they ensured that appropriate high-level institutional engagement was provided.

The steering committee had a commitment to foster dissemination of the project across the institution, but was aware of the problems that would arise if unrealistic expectations were built up. Therefore

timing and presentation of the project were considered crucial to successful adoption within the institution.

Practitioner level

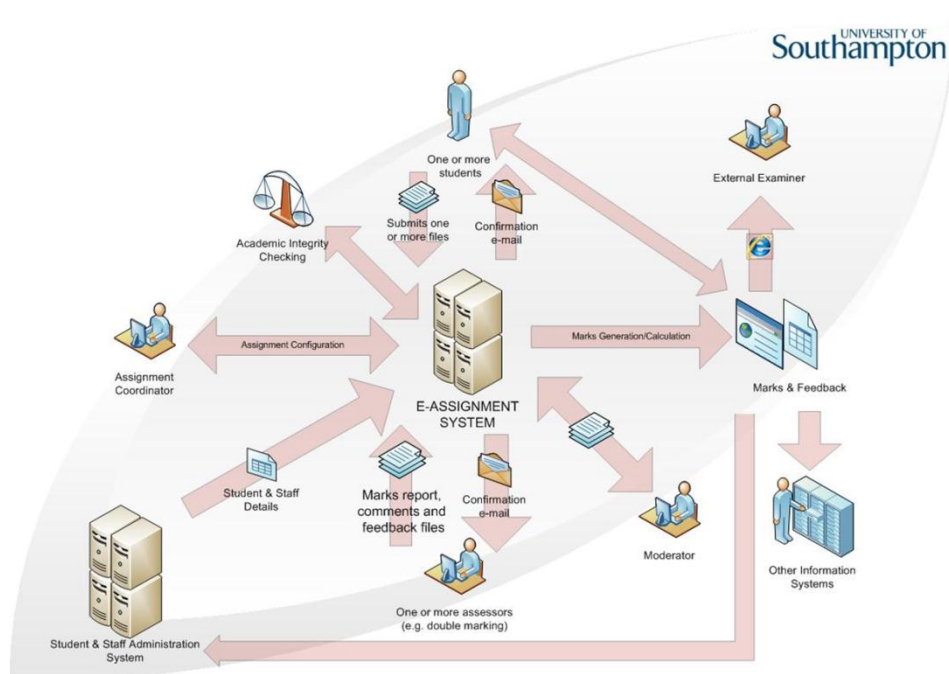
In order to build support and receive critical feedback, interest groups were identified as the system were developed. Academic staff were consulted on an individual, ad-hoc basis throughout the project, rather than within formal meetings. It also helped that the project leader is involved in teaching and participates in programmes which use the system. A presentation was made to Directors of Education from all Schools as well as presentations to senior administrative staff in each Faculty to promote awareness of the system. This was to prepare the ground for asking for volunteers to join interest groups that can advise on embedding the system across the institution. The groups we have formed are for Academic staff (Assessors), Students and Administrators. The project has built on a solution that already exists for some Schools and therefore staff already using the system have been eager to contribute to the definition of the institutional system as well as volunteering to test it.

Project Team

It took many months to completely populate the project team due to an unforeseen complete reorganisation and review of University IT staff. Initially there were staff that were fully or partly allocated to the project but were located in different geographic locations (different campuses). This was unsatisfactory and held the project back despite our regular meetings and online communication. Once this issue was resolved and staff were sited in a single location, regular and frequent impromptu meetings could be held which got the project back on track although behind schedule.

Implementation

From the prior work on the demonstrator system we already had a clear idea of functionality and important changes in specification needed for the system. A functional specification was built for the various modules (e.g. submission, marking, administration etc.) that combine to form the system as a whole. The main components are illustrated in the diagram below.



The development team comprised (as well as the project manager), two .NET developers (one focussed on the administration module, one focussed on other modules), a database developer and a usability expert. Work concentrated on getting the database correct first, once this was done the

student submission module was developed, then the marking and administration modules were developed in parallel. Visual Studio 2008 and SQL Server Management Studio were the primary development tools, with iterative testing performed within a variety of web browsers including Firefox, Internet Explorer and Google Chrome, the codebase stored in an SVN repository. Due to the delays in getting development running much of the desired use of Microsoft SDL was abandoned although there were frequent meetings to discuss security risks/requirements/issues.

Outputs and Results

To date we have developed components of an institutional system for the administering, marking and feedback of Open-Ended Assignments. These are:

- Student Submission
- Assessor Marking and Feedback
- Administration

Examples of how these function can be seen from videos at:

www.jisc-ea.soton.ac.uk/resources/studentsubmission/
www.jisc-ea.soton.ac.uk/resources/markingsubmission/

and screenshots of administration at:

<http://www.jisc-ea.soton.ac.uk/resources/>

This site will be updated with additional support media during the 2010-2011 academic year.

The University is committed to making the eAssignment system available across the Institution starting in the academic year 2011/2012. During the academic year 2010/2011 the system will be used by all Schools who have used the demonstrator system. In addition the School of Humanities will be using it. They abandoned the submission system of the institutional VLE and were about to return to using their former paper based hand in system. This was because the institutional VLE did not permit submission deadlines to be extended. From 2011 the system will be offered to early adopters in Schools who have not used the system previously.

On 1st August 2010 the University moved from a School based structure to a Faculty based structure, the project was aware of this and this change will not impact on the eAssignment system. It has sufficient flexibility to cope with different organisational structures.

Once accepted, the system will be passed from the development team to the corporate applications team who deliver applications that encompass the whole institution. All of the development team are now HEFCE-funded staff, one contractor having been recruited to the institution during the life of the project, and therefore all of the team will remain in the institution on completion of this project.

The software will be made available to others, via www.jisc-ea.soton.ac.uk/ as soon as it has reached an appropriate stage. We are aware of the interest from other institutions (University of Bournemouth, Imperial College Medical School) and we are keen to help others use the system with their own students.

Outcomes

The outcomes delivered are described in the *Outputs* section above. They match the objectives that we stated in our application. As we started the project, the institution commenced a [review of assessment processes](#) in an effort to harmonise these across the institution. The development of the eAssignment system ran in parallel with this initiative and will continue to do so. It was beneficial that the chair of both steering committees was the same individual. We found that during specification of the system we needed institutional answers as to how certain processes should be delivered because we had encountered different approaches and solutions to parts of the assignment process across the institution. For example, when a student submits work before the deadline, should they be allowed to replace the work they had already submitted prior to the deadline or are they only allowed a single submission? If repeated submission is permitted should the system keep copies of all submitted work or just the most recent submission?

We hope other institutions will be keen to adopt our system and benefit from our guidance on how to implement it. We are willing to help them develop their own understanding of specific issues relating to assessment.

We have given presentations based around the eAssignment system at [conferences](#) and we will be writing up the work for publication.

Conclusions

Our conclusion is that it is possible to build an institutional-wide assignment system, but before it is fully implemented all aspects of assessment policy and procedure need to be reviewed across the institution and consistent processes adopted. There are benefits to students in terms of the submission process and feedback, there are benefits to administration in terms of reduced clerical load and there are institutional benefits in terms of enhanced quality, cost reduction and potentially improved management and consistency of assessment processes. Piloting such a system solely within a portion of an institution can provide significant insight into potential benefits and pitfalls without the risks/resource requirements of 'full' deployment.

We would like to offer the system to other institutions. Some development work will be required to localise the system, in particular the interaction with the student administration system, however the modular software design will facilitate this. There will be a need for resources to be identified at those institutions to achieve this.

We can see the potential to extend the system in various ways, for example:

- Provide the ability to link the assessment criteria more closely with programme and module aims and learning outcomes.
- Provide the ability to link the assessment criteria with the requirements of professional bodies.
- Link submitted work to an institutional [ePrints system](#) so that student exemplars can be published.
- Link feedback provided to specific learning resources to support improved learning.
- Link to other JISC projects concerned with student feedback using multimedia techniques.

Recommendations (optional)

- If you introduce an institutional wide assignment system, you need to ensure that you have an institutional assessment policy and accepted procedures in place.
- If you have a variety of assessment policies, you can use an institutional assignment handling system to help drive institutional change towards harmonisation of policy.
- If you try to develop an institutional system during reorganisation of institutional IT ensure that the you have total commitment from those responsible for staff issues.
- Use the JISC infrastructure for support, they have been very helpful.
- Communicate across the institution at all levels to ensure awareness of the project and to manage expectations.
- Find champions to support your project, do not try to impose a solution.
- For this particular project promote online entry of marks and comments rather than an online marking system.

References

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